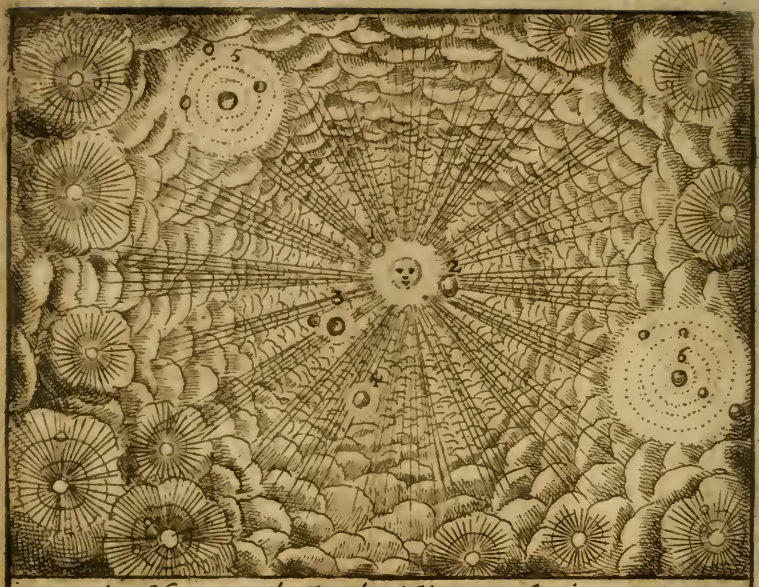

1 Mercury, 2. Venus, 3. the Earth, 4 Mars, 5. Jupiter, 6. Saturn.

Great Fontenelle! the Heavens did Descry,
And taught the Ladies his Philosophy.

A

Week's Converſation

ON THE

PLURALITY

OF

WORLDS.

By Monſieur DE FONTENELLE.

THE SIXTH EDITION.

Tranſlated by

Mrs. A. BEHN, Mr. J. GLANVIL, } { JOHN HUGHES Eſq; and WILLIAM GARDNER Eſq.

To which is added.

Mr. ADDISON'S DEFENCE

ON THE

NEWTONIAN PHILOSOPHY.

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MDCCXXXVII

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PREFACE.

I *AM pretty much in the same* CASE *with* CICERO, *when he undertook to write of* Philosophical Matters *in the* Latin *Tongue, there being, then, no Books upon that Subject, but what were in* Greek: *He was told, that such an Attempt would be useless; because, those who were Lovers of Philosophy, would rather take the Pains to search for it in* Greek *Writers, than make use of* Latin *ones, which treated of it, but at second Hand; and that those who had no Relish for*

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this Science, would never trouble their Heads with either Greek *or* Latin. *To these Objectors, he answered, it would happen quite otherwise; for,* says he, *the great Ease People will find in reading* Latin Books, *will tempt those to be Philosophers who are none; and they who already are Philosophers, by reading* Greek *Books, will be very glad to see how the Subject is handled in* Latin.

CICERO *might with good Reason answer as he did, because the Excellency of his Genius, and the great Reputation he had acquired, warranted the Success of all he wrote: But in a Design, not much unlike his, I am far from having those Grounds of Confidence which he had. My Purpose is to discourse of* Philosophy, *but not directly in a Philosophical Manner; and to raise it to such a Pitch, that it shall not be too dry and insipid a Subject to please Gentlemen; nor too mean and trifling to entertain Scholars. Should I be told* (*as* Cicero *was*) *that such a Discourse*

Discourse as this, would not please the Learned *because it cannot teach Them any Thing; nor the* Illiterate, *because they will have no Mind to learn; I will not answer as he did: It may be, endeavouring to please* every Body, *I have pleased* no Body; *now, to keep a Medium betwixt two Extreams, is so very difficult, that I believe, I shall never desire to put myself a Second Time to the like Trouble.*

If I should acquaint those who are to read this Book, and have any Knowledge of Natural Philosophy, *that I do not pretend to* Instruct, *but only to* Divert *them; by presenting to their View, in a gay and pleasing Dress, what they have already seen in a more grave and solid Habit: Not but* They, *to whom the Subject is* New, *may be both* Diverted *and* Instructed: *The* first *will act contrary to my Intention, if they look for* Profit, *and the last, if they seek for nothing but* Pleasure.

I have

I have choſen that Part *of* Philoſophy *which is moſt likely to excite* Curioſity; *for I think nothing concerns us more, than to* enquire *how this* World, *which we inhabit* is made; *and whether there be any other* Worlds *like it, which are alſo* inhabited *as* This is? *But after all, it is at every Body's Diſcretion, how far they will run their Diſquiſitions:* Thoſe *who have any Thoughts to loſe, may throw them away upon ſuch Subjects as theſe; but, I ſuppoſe,* ſuch *as can employ their Time better, will not be at ſo vain and fruitleſs an Expence.*

In theſe Diſcourſes, *I have introduced a* LADY, *to be inſtructed in Things of which ſhe never heard; and I have made uſe of this Fiction, to render the Book the more exceptable, and to give Encouragement to Gentlewomen, by the Example of one of their own Sex, who without any ſupernatural Parts, or Tincture of Learning, underſtands what is ſaid to her; and without any Confuſion, rightly apprehends what* Vortexes

Vortexes *and other* Worlds *are : And why may not there be a Woman like this imaginary* Marchioness, *since her Conceptions are no other than such as she could not chuse but have ?*

To penetrate into things either obscure in themselves, or but darkly expressed, requires deep Meditation, and an earnest Application of the Mind ; but here, nothing more is requisite than to read and imprint an Idea of what is read in the Fancy, which will certainly be clear enough. I shall desire no more of the Fair Sex, than that they will peruse this System *of* Philosophy, *with the same Application that they do a* Romance *or* Novel, *when they would retain the Plot, or find out all its Beauties. It is true, that the* Ideas *of this are less familiar to most* Ladies *than those of* Romances, *but they are not more obscure ; for at most, twice or thrice thinking, will render them very perspicuous.*

I have not compoſed an airy Syſtem, *which has no Foundation at all: I have made uſe of ſome true Philoſophical Arguments, and of as many as I thought neceſſary; but it falls out very luckily in this Subject, that the* Phyſical-Ideas *are in themſelves very diverting; and as they convince and ſatisfy Reaſon, ſo at the ſame Time they preſent to the Imagination a Proſpect which looks as if it were made on purpoſe to pleaſe it.*

When I meet with any Fragments which are not of this kind, I put them into ſome pretty ſtrange Dreſs: Virgil *has done the like in his* Georgicks; *when his Subject is very dry, he adorns it with pleaſant Digreſſions:* Ovid *has done the ſame in his* Art of Love; *and though his Subject be of itſelf very pleaſing, yet he thought it tedious to talk of nothing but* Love. *My Subject has more need of Digreſſions than his, yet I have made uſe of them very ſparingly, and of ſuch only, as the natural Liberty of Converſation allows: I have placed them only where I thought my Readers would*

would be pleaſed to meet with them; the greateſt Part of them are in the Beginning of the Book, becauſe the Mind cannot at firſt be ſo well acquainted with the principal Ideas which are preſented to it; and, in a Word, they are taken from the Subject itſelf; or as near to it, as is poſſible.

I have related nothing concerning the Inhabitants *of the* ſeveral Worlds, *which may ſeem fabulous, or chimerical; but have ſaid whatever may be reaſonably thought of them; and the Viſions which I have added, have ſome real Foundation; what is* true, *and what is* falſe *are mingled together, but ſo as to be eaſily diſtinguiſhed: I will not undertake to juſtify ſo fantaſtical and odd a Compoſition, which is the principal Point of the Work, and yet for which, I can give no very good Reaſon.*

There remains no more to be ſaid in this Place, to a ſort of People, who perhaps will not be eaſily ſatisfied, though I have good Reaſons to give them; but, that

that the beſt which can be *given* will not *ſatisfy* them. *Theſe are the ſcrupulous Perſons who imagine, that the placing* Inhabitants *any where, but upon the* Earth, *will prove dangerous to* Religion: *I know how exceſſively tender ſome* are *in* religious Matters, *and therefore I am very unwilling to give any Offence, in what I publiſh, to People whoſe Opinion is contrary to that I maintain: But Religion can receive no Prejudice by my Syſtem, which fills an* Infinity of Worlds *with* Inhabitants, *if a little Error of the Imagination be but rectified. When it is ſaid the* Moon *is* inhabited, *ſome preſently fancy that there are ſuch* Men *there, as ourſelves; and Prieſts without any more ado, think him an* Atheiſt, *who is of that Opinion.* None of *Adam*'s Poſterity, *cry they*, ever travelled ſo far as the *Moon*; nor were any Colonies ever planted in that Region. *I grant it. The* Men *in the* Moon *are not the* Sons *of* Adam: *And here again* Theology *would be puzzled, if there ſhould be* Men *any where, who*

who never descended from him. *To say no more, this is the great Difficulty to which all others may be reduced: To clear it by a larger Explanation, I must make use of Terms which deserve greater Respect, than to put into a Treatise, so far from being serious as this is. But perhaps there is no need of* answering *the* Objection, *for it concerns no Body but the* Men *in the* Moon; *and I never yet affirmed there are* Men *there*; *if any ask what the* Inhabitants *are, if they be not* Men? *All I can say is, that I never saw them; and it is not because I have seen them*; *that I speak of them: Let none however think, that I say there are* no Men *in the* Moon, *purposely to avoid the* Objection *made against me; for it appears it is impossible there should be* any Men *there, according to the* Idea *I have framed of that infinite Diversity and Variety, which is to be observed in the Works of Nature; this* Idea *runs through the whole Book, and cannot be contradicted by any* Philosopher: *Nay, I believe I shall only hear this* Objec-

jection

jection *started by such as shall speak of these* Discourses, *without having read them. But is this a Point to be depended on? No, on the contrary, I should more probably fear, that the* Objection *might be made to me from many Passages.*

The Reader will find in this Edition *besides many Improvements interspersed in the Body of the* Work, *one* New Conversation, *in which I have put together those Reasonings, which I had omitted in the foregoing ones; and have subjoined some* Late Discoveries *in the* Firmament, *several of which have never yet been made Publick.*

FONTENELLE.

To

1. Mercury. 2. Venus. 3. The Earth. 4. Mars. 5. Jupiter. 6. Saturn

FONTENELLE's

Plurality of Worlds.

To Monsieur *L.*

TO give you, Sir, a particular account how I pass'd my time in the Country with the Marchioness of *G******, would amount to a Volume; and what is worse, a Volume of Philosophy. I know you expected Entertainments of other kinds, such as Dancing, Gaming, Hunting, *&c.* Instead of which, you must take up with Vortex's, Planets, and New Worlds; these were the Subject of our Conversation. And by good luck, as you are a Philosopher,

it will be no great disappointment to you, but on the contrary, I fancy, you will be pleas'd, that I have brought over the Marchioness to our Party; we could not have gain'd a more considerable Person, for Youth and Beauty are ever inestimable: If Wisdom would appear with Success to Mankind, do you think she would not do well to take upon her the Person of the Countess? And yet was her Company but half so agreeable, all the World would run mad after Wisdom. But tho' I tell you all the Discourse I had with the Lady, you must not expect Miracles from me. It is impossible, without her Wit, to express what she said, in the same manner she spake it: For my part, I think her very learned, from the great Disposition she has to Learning. It is not poring upon Books alone that makes a Man of Understanding. I know many that have done nothing else, and yet I fancy are not one tittle the wiser. But perhaps you expect, before I enter upon my Subject, I should describe the Lady's House, with its Situation, &c. Many great Palaces have

have been turn'd inside outward upon far less occasion. But I intend to save you and myself that labour; let it suffice that I tell you, I found no Company with the Marchioness, and I was not at all displeas'd at it. The two first Days drain'd me of all the News I brought from *Paris*; what I now send you is the rest of our Conversation, which I will divide into so many parts, as we were Evenings together.

The First Evening.

That the Earth is a Planet which turns on itself, and round the Sun.

WE went one Evening after Supper to walk in the Park: the Air was extremely refreshing, because that Day had been very hot; the Moon had been up about an hour, and her Lustre between the Trees made a most agree-

able Mixture of Light and Darkneſs; the Stars were in all their Glory, and not a Cloud appear'd throughout the Sky: I was muſing on this awful Proſpect; but who can think long of the Moon and Stars in the Company of a pretty Woman! I am much miſtaken if that's a time for Contemplation: Well, Madam, *ſaid I to the Marchioneſs*, is not the Night as pleaſant as the Day? The Day, *ſaid ſhe*, like a fair Beauty, is clear and dazzling; but the Night, like a brown Beauty, more ſoft and moving. You are generous, Madam, *I reply'd*, to prefer the Brown, you that have all the Charms that belong to the Fair; but is there any thing more beautiful in Nature than the Day? The Heroines of Romances are generally fair; and that Beauty muſt be perfect, which has all the Advantages of Imagination. Tell not me, *ſaid ſhe*, of perfect Beauty, nothing can be ſo that is not moving. But ſince you talk of Romances, why do Lovers in their Songs and Elegies addreſs themſelves to the Night? 'Tis the Night, Madam, *ſaid I*, that crowns their Joys, and therefore deſerves

ſerves their thanks: But 'tis the Night, *ſaid ſhe*, that hears their Complaints; and how comes it to paſs the Day is ſo little truſted with their Secrets? I confeſs, Madam, *ſaid I*, the Night has ſomewhat a more melancholy Air than the Day; we fancy the Stars march more ſilently than the Sun, and our Thoughts wander with the more liberty, whilſt we think all the World at reſt but our ſelves: beſides, the Day is more uniform, we ſee nothing but the Sun, and Light in the Firmament; whilſt the Night gives us variety of Objects, and ſhews us ten thouſand Stars, which inſpire us with as many pleaſant Ideas. What you ſay is true, *ſaid ſhe*; I love the Stars, there is ſomewhat charming in them, and I could almoſt be angry with the Sun for effacing 'em. I can never pardon him, *I cry'd*, for keeping all thoſe Worlds from my Sight. What Worlds, *ſaid ſhe*, looking earneſtly upon me, what Worlds do you mean?

I beg your pardon, Madam, *ſaid I*; you have put me upon my Folly, and I begin to rave. What Folly, *ſaid ſhe?* I

discover none. Alas, *said I*, I am asham'd, I must own it, I have had a strong fancy every Star is a World. I will not swear it is true, but must think so, because it is so pleasant to believe it: 'tis a fancy come into my head, and is very diverting. If your Folly be so diverting, *said the Marchioness*, pray make me sensible of it; provided the pleasure be so great, I will believe of the Stars all you would have me. It is, *said I*, a Diversion, Madam, I fear you will not relish; 'tis not like reading one of *Moliere*'s Plays: 'tis a Pleasure rather of the Fancy than of the Judgment. I hope, *reply'd she*, you do not think me incapable of it: teach me your Stars, I will shew you the contrary. No, no, *I reply'd*, it shall never be said I was talking Philosophy at ten of the clock at Night to the most amiable Creature in the World; find your Philosophers somewhere else.

But in vain I excus'd myself: who could resist such Charms? I was forc'd to yield, and yet knew not where to begin; for to a Person who understood nothing of Natural Philosophy, you must

must go a great way about to prove that the Earth may be a Planet, the Planets so many Earths, and all the Stars Worlds: however, to give her a general Notion of Philosophy, I at last resolv'd on this Method. All Philosophy, *said I*, Madam, is founded upon two things, either that we are too short-sighted, or that we are too curious; for if our Eyes were better than they are, we should soon see whether the Stars were Worlds or not; and if on the other hand we were less curious, we should not care whether the Stars are Worlds or not; which I think is much to the same purpose. But the Business is, we have a mind to know more than we see: And again, if we could discern well what we do see, it would be too much known to us: but we see things quite otherwise than they are. So that your true Philosopher will not believe what he does see, and is always conjecturing at what he does not, which is a Life I think not much to be envy'd. Upon this I fancy to myself, that Nature very much resembles an Opera; where you stand, you do not see

the Stage as it really is; but as it is plac'd with advantage, and all the Wheels and Movements are hid, to make the Repreſentation the more agreeable: Nor do you trouble yourſelf how, or by what means the Machines are mov'd, tho' certainly an Engineer in the Pit is affected with what does not touch you; he is pleas'd with the Motion, and is demonſtrating to himſelf, on what it depends, and how it comes to paſs. This Engineer then is like a Philoſopher, tho' the Difficulty is greater on the Philoſopher's part, the Machines of the Theatre being nothing ſo curious as thoſe of Nature, who diſpoſes her Wheels and Springs ſo out of ſight, that we have been long a gueſſing at the Movement of the Univerſe. Suppoſe then the Sages to be at an Opera, *i. e. Pythagoras*, *Plato*, *Ariſtotle*, and all the Wiſe Men who have made ſuch a noiſe in the World, for theſe many Ages; we will ſuppoſe 'em at the Repreſentation of *Phaeton*, where they ſee the aſpiring Youth lifted up by the Winds, but do not diſcover the Wires by which he mounts, nor know

they

they any thing of what is done behind the Scenes. : Would you have all these Philosophers own themselves to be stark Fools, and confess ingenuously they know not how it comes to pass? No, no, they are not called Wise Men for nothing; tho', let me tell you, most of their Wisdom depends upon the Ignorance of their Neighbours. Every Man presently gives his Opinion, and how improbable soever, there are Fools enough of all sorts to believe 'em: One tells you *Phaeton* is drawn up by a hidden Magnetick Virtue, no matter where it lies; and perhaps the grave Gentleman will take Pet if you ask him the Question. Another says, *Phaeton* is compos'd of certain Numbers that make him mount; and after all, the Philosopher knows no more of those Numbers than a sucking Child does of *Algebra*. A third tells you, *Phaeton* hath a secret Love for the top of the Theatre; and, like a true Lover, cannot be at rest out of his Mistress's Company; with an hundred such extravagant Fancies, that a Man must conclude the old Sages were very good Banterers. But

now comes Monsieur *Descartes* with some of the Moderns, and they tell you *Phaeton* ascends, because a greater Weight than he descends; so that now we do not believe a Body can move unless it is push'd and forc'd by another Body, and as it were drawn by Cords, so that nothing can rise or fall but by means of a Counterpoise: to see Nature then as she really is, you must stand behind the Scenes at the Opera. I perceive, *said the Marchioness*, Philosophy is now become very mechanical. So mechanical, Madam, *said I*, that I fear we shall quickly be asham'd of it; they will have the World to be in great, what a Watch is in little, which is very regular, and depends only upon the just disposing of the several parts of the Movement. But pray tell me, Madam, had you not formerly a more sublime Idea of the Universe? Do not you think then that you honour'd it more than it deserv'd? for most Folks have the less esteem for it since they have pretended to know it. I am not of their opinion, *said she*; I value it the more since I know it resembles

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a Watch; and the whole Order of Nature, the more plain and easy it is, to me it appears the more admirable.

I know not, *said I*, who has inspir'd you with these solid Notions; but I am certain there are few that have them besides yourself. People generally admire what they do not comprehend, they have a Veneration for Obscurity, and look upon Nature while they do not understand her, as a kind of Magic, and despise her below Legerdemain, when once they are acquainted with her: but I find you, Madam, so much better dispos'd, that I have nothing to do but to draw the Curtain, and shew you the World. That then which appears fartheſt from the Earth (where we reside) is called the Heavens, that azure Firmament, where the Stars are fasten'd like so many Nails, and are call'd fix'd, because they seem to have no other Motion than that of their Heaven, which carries them with itself from East to West. Between the Earth and this great Vault (as I may call it) hang

at different Heights, the *Sun*, and the *Moon*, with the five other Stars, *Mercury*, *Venus*, *Mars*, *Jupiter*, and *Saturn*, which we call the Planets: these Planets, not being fastned to the same Heaven, and having very unequal Motions, have divers Aspects and Positions; whereas the fixed Stars in respect to one another, are always in the same Situation: for example, the *Chariot*, which is compos'd of the seven Stars, has been, and ever will be, as it now is, tho' the Moon is sometimes nearer to the Sun, and sometimes farther from it; and so it is with the rest of the Planets. Thus things appear'd to the Old *Chaldean* Shepherds, whose great leisure produced these first Observations, which have since been the Foundation of Astronomy; which Science had its birth in *Chaldea*, as Geometry sprung from *Egypt*, where the Inundation of the *Nile* confounding the Bounds of their Fields, was the occasion of their inventing exacter Measures, to distinguish every one's Land from that of his Neighbour. So that Astronomy

my was the Daughter of Idleneſs, Geometry the Daughter of Intereſt; and if we did but examine Poetry, we ſhould certainly find her the Daughter of Love.

I am glad, ſaid the Lady, I have learnt the Genealogy of the Sciences, and am convinc'd I muſt ſtick to Aſtronomy; my Soul is not mercenary enough for Geometry, nor is it tender enough for Poetry; but I have as much time to ſpare, as Aſtronomy requires: beſides, we are now in the Country, and lead a kind of Paſtoral Life, which ſuits beſt with Aſtronomy. Do not deceive yourſelf, Madam, *ſaid I*, 'tis not a true Shepherd's Life to talk of the Stars and Planets: See if they paſs their Time ſo in *Aſtræa*. That ſort of Shepherd's Craft, *replied ſhe*, is too dangerous for me to learn: I love the honeſt *Chaldeans*, and you muſt teach me their Rules, if you would have me improve in their Science. But let us proceed. When they had rank'd the Heavens in that manner you tell me, pray, what is the next Queſtion? The next,

next, *said I,* is the disposing the several Parts of the Universe, which the Learned call *Making a System:* but before I expound the first System, I would have you observe, we are all naturally like that Madman at *Athens*, who fancy'd all the Ships were his that came into the *Pyræum* Port. Nor is our Folly less extravagant; we believe all things in Nature design'd for our Use; and do but ask a Philosopher, to what purpose there is that prodigious company of fixed Stars, when a far less Number would perform the Service they do us? he answers coldly, they were made to please our Sight. Upon this Principle, they imagined the Earth rested in the Centre of the Universe, while all the Celestial Bodies (which were made for it) took the pains to turn round to give Light to it. They plac'd the Moon above the Earth, *Mercury* above the Moon, after *Venus* the Sun, *Mars*, *Jupiter*, *Saturn*; above all these they set the Heaven of fixed Stars, the Earth was just in the middle of those Circles which contain

the

the Planets; and the greater the Circles were, they were the farther distant from the Earth, and by consequence the fartheſt Planets took up the moſt Time in finiſhing their Courſe, which in effect is true. But why, *ſaid the Marchioneſs*, interrupting me, do you diſlike this Syſtem? It ſeems to me very clear and intelligible. However, Madam, *ſaid I*, I will make it plainer; for ſhould I give it you as it came from *Ptolemy* its Author, or ſome other who have ſince ſtudied it, I ſhould fright you, I fancy, inſtead of diverting you. Since the Motions of the Planets are not ſo regular, but that ſometimes they go faſter, ſometimes ſlower, ſometimes are nearer the Earth, and ſometimes farther from it; the Antients invented I know not how many Orbs or Circles involv'd one within another, which they thought would ſolve all Objections: This Confuſion of Circles was ſo great, that at that time, when they knew no better, a certain King of *Caſtile*, a great Mathematician, but not much troubled with Religion, ſaid,

That

That had God consulted him when he made the World, he would have told him how to have framed it better. The Saying was very atheistical, and no doubt the Instructions he would have given the Almighty, was the suppressing those Circles with which he had clogg'd the Celestial Motions, and the taking away two or three superfluous Heavens which were plac'd above the fixed Stars: for the Philosophers, to explain the Motion of the Celestial Bodies, had above the uppermost Heaven (which we see) found another of Crystal, to influence and give Motion to the inferior Heavens; and where-ever they heard of another Motion, they presently clapp'd up a Crystal Heaven, which cost 'em nothing. But why must their Heaven be of Crystal, *said the Marchioness*; would nothing else serve as well? No, no, *replied I*, nothing so well; for the Light was to come thro' them, and yet they were to be solid. *Aristotle* would have it so, he had found Solidity to be one of their Excellencies; and when he had once said it, no body would be so rude

rude as to queſtion it. But it ſeems there were Comets much higher than the Philoſophers expected, which, as they paſs'd along, broke the Cryſtal Heavens, and confounded the Univerſe: But to make the beſt of a bad Market, they preſently melted down their broken Glaſs, and to *Ariſtotle*'s Confuſion, made the Heavens fluid; and by the Obſervations of theſe latter Ages it is now out of doubt, that *Venus* and *Mercury* turn round the Sun, and not round the Earth, according to the antient Syſtem, which is now every where exploded, and all the *Ipſe dixits* not worth a Ruſh. But that which I am going to lay down, will ſolve all, and is ſo clear, that the King of *Caſtile* himſelf may ſpare his Advice. Methinks, *ſays the Marchioneſs*, your Philoſophy is a kind of Outcry, where he that offers to do the Work cheapeſt, carries it from all the reſt. 'Tis very true, *ſaid I*, Nature is a great Houſewife, ſhe always makes uſe of what coſts leaſt, let the Difference be ever ſo inconſiderable: and yet this Frugality is accompanied with an extraordinary Magnificence, which

which shines thro' all her Works; that is, she is magnificent in the Design, but frugal in the Execution: and what can be more praise-worthy than a great Design accomplish'd with a little Expence? But in our Ideas we turn things topsy-turvy, we place our Thrift in the Design, and are at ten times more charge in Workmanship than it requires, which is very ridiculous. Imitate Nature then, *said she*, in your System, and give me as little Trouble as you can to comprehend you. Fear it not, Madam, *said I*, we have done with our Impertinences: Imagine then a *German* call'd *Copernicus* confounding every thing, tearing in pieces the beloved Circles of Antiquity, and shattering their Crystal Heavens like so many Glass-Windows; seiz'd with the noble Rage of Astronomy, he snatches up the Earth from the Centre of the Universe, sends her packing, and places the Sun in the Center, to which it did more justly belong; the Planets no longer turn round the Earth, nor include it in the Circles they describe: if they give us Light, it is but by chance, and

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as they meet us in their way. All now turns round the Sun; even the Earth herself, and *Copernicus*, to punish the Earth for her former Laziness, makes her contribute all he can to the Motion of the Planets and Heavens; and now stripp'd of all the heavenly Equipage with which she was so gloriously attended, she has nothing left her but the *Moon*, which still turns round about her. Fair and softly, *says the Marchioness*, I fancy you yourself are seiz'd with the noble Fury of Astronomy; a little less Rapture, and I shall understand you the better. The Sun, you say, is in the Center of the Universe, and is immoveable; what follows next? It is *Mercury*, *said I*; he turns round the Sun, so that the Sun is the Centre of the Circle wherein *Mercury* moves; above *Mercury* is *Venus*, who turns also round the Sun: after comes the Earth, which being placed higher than *Mercury* and *Venus*, makes a greater Circle round the Sun than either of them; at last come *Mars*, *Jupiter*, and *Saturn*, in the same order I name 'em, so that *Saturn* has the greatest Circle round the Sun,

Sun, which is the reason he is longer in making his Revolution than any of the other Planets. You have forgot the Moon, *said the Marchioness*. We shall quickly find her again, *said I*; the Moon turns round the Earth, and does not leave her; but as the Earth advances in the Circle which she describes about the Sun; and if the Moon turns round the Sun, it is because she will not quit the Earth. I understand you, *said she*, and I love the Moon for staying with us when all the other Planets abandon us; nay, I fear your *German* would have willingly taken her away too if he could, for in all his Proceedings I find he had a great Spite to the Earth. 'Twas well done of him, *said I*, to abate the Vanity of Mankind, who had taken up the best place in the Universe, and it pleases me to see the Earth in the Crouds of the Planets. Sure, *said she*, you do not think their Vanity extends itself so far as Astronomy! Do you believe you have humbled me, in telling me the Earth goes round the Sun? For my part, I do not think myself at all the worse for it. I confess, *said I*, Madam,

dam, I believe a fair Lady would be much more concerned for her Place at a Ball, than for her Rank in the Universe: and the Precedence of two Planets will not make half such a Noise in the World as that of two Ambassadors. However, the same Inclination which reigns at a Ceremony, governs in a System; and if you love the uppermost Place in the one, the Philosopher desires the Centre in the other: he flatters himself that all things were made for him, and insensibly believes a matter of pure Speculation to be a point of Interest. This is a Calumny, *said she*, you have invented against Mankind; why did they receive this System, if it was so erroneous? I *humbly* know not, *said I*, but I am sure *Copernicus* himself distrusted the Success of his Opinion, he was a long time before he would venture to publish it, nor had he done it then without the Importunity of his Friends. But do you know what became of him? the very Day they brought him the first printed Sheet of his Book, he died: he foresaw he should never be able to reconcile all the Contra-

tradictions, and therefore very wisely slipt out of the way. I would be just to all the World, *said the Marchioness*, but 'tis hard to fancy we move, and yet see we do not change our Place; we find ourselves in the Morning where we lay down at Night: Perhaps you will tell me the whole Earth moves. Yes, certainly, *said I*, it is the same case as if you fell asleep in a Boat upon the River, when you awake you find yourself in the same Place and the same Situation in respect to all the Parts of the Boat. 'Tis true, *she reply'd*, but here's a great difference, when I awake, I find another Shore, and that shews me my Boat hath changed Place; but 'tis not the same with the Earth, I find all things as I left 'em. No, no, *said I*, there is another Shore too; you know that beyond the Circles of the Planets are fixed Stars, there is our Shore. I am upon the Earth, and the Earth makes a great Circle round the Sun, I look for the Centre of the Circle, and see the Sun there; then I direct my Sight beyond the Sun in a right Line, and should certainly discover the fixed Stars which answer to the

the Sun, but that the Light of the Sun effaces 'em: But at night I easily perceive the Stars which corresponded with him in the Day, which is exactly the same thing; if the Earth did not change its Place in the Circle where it is, I should see the Sun always against the same fixed Stars; but when the Earth does change its Place, the Sun must answer to other Stars; and there again is your Shore, which is always changing. And seeing the Earth makes her Circle in a Year, I see the Sun likewise in the space of a Year answer successively to the whole Circle of the fixed Stars, which Circle is called the *Zodiack*; I will draw you the Figure of it, if you please, on the Sand. 'Tis no matter, *said she*, I can do well enough without it; besides, it will give an Air of Learning to my Park, which I would not have in it: For I have heard of a certain Philosopher, who being shipwreck'd and cast upon an unknown Island, seeing several Mathematical Figures traced on the Sea-shore, cry'd out to those that followed him, Courage, my Companions, the Isle is inhabited; behold

hold the Footsteps of Men: But you may spare your Figures; such Footsteps are not decent here.

I confess, Madam, *said I*, the Footsteps of Lovers would better become this Place; that is, your Name and Cypher carv'd on the Trees by your Adorers. Tell not me, *said she*, of Lovers and Adorers; I am for my beloved Sun and Planets. But how comes it to pass that the Sun, as to the fixed Stars, compleats his Course but in a Year, and yet goes over our Heads every day? Did you never, *reply'd I*, observe a Bowl on the Green? It runs towards the Jack, and at the same time turns very often round itself, so that the Parts which were above are below, and those which were below are above; just so it is with the Earth, at the same time that she advances on the Circle, which in a Year's space she makes round the Sun, in 24 Hours she turns round her self; so that in 24 Hours every Part of the Earth loses the Sun, and recovers him again, and as it turns towards the Sun, it seems to rise: and as it turns from him,

him, it seems to fall. It is very pleasant, *said she*, that the Earth must take all upon herself, and the Sun do nothing. And when the Moon, the other Planets and the fixed Stars seem to go over our Heads every 24 Hours, you'll say that too is only Fancy? Mere Fancy, *said I*, which proceeds from the same Cause; for the Planets compleat their Courses round the Sun at unequal times, according to their unequal Distances; and that which we see to-day, answers to a certain Point in the *Zodiack*, or Circle of the fixed Stars, we see to-morrow answer to another Point, because it is advanced on its own Circle, as well as we are advanced upon ours. We move, and the Planets move too, which must make a great Alteration; so that what seems irregular in the Planets, proceeds only from our Motion, when in truth, they are all very regular. I will suppose 'em so, *said the Marchioness*; but I would not have their Regularity put the Earth to so great trouble: methinks you exact too much Activity from so ponderous a Mass. But, *said I*, had you ra-

ther that the Sun and all the Stars, which are vaſt great Bodies, ſhould in 24 Hours travel ſuch an Infinity of Miles, and make ſo prodigious a *Tour* as they needs muſt, if the Earth did not turn round itſelf every 24 Hours? Oh, *ſaid ſhe*, the Sun and the Stars are all Fire, their Motion is not very difficult; but the Earth, I fancy, is a little unwieldy. That ſignifies nothing, *I replied*; for what do you think of a Firſt-Rate Ship, which carries near a hundred and fifty Guns, and above 3000 Men, beſides great Loads of Merchandize? yet you ſee one Puff of Wind ſets her a ſailing, becauſe the Water is liquid, and being eaſily ſeparated, very little reſiſts the Motion of the Ship. So the Earth, though never ſo weighty, is as eaſily borne up by the Celeſtial Matter, which is a thouſand times more fluid than the Water, and fills all that great Space where the Planets float; for where would you have the Earth faſtned to reſiſt the Motion of the Celeſtial Matter, and not be driven by it? You may as well fancy a little Block of Wood

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can withstand the Current of a River. But pray, *said she*, how can the Earth with all its Weight, be borne up by your Celestial Matter, which must be very light, because it is so fluid? It does not argue, *said I*, that what is most fluid is most light: for what think you of the great Ship I mentioned just now, which with all its Burden is yet lighter than the Water it floats on? I will have nothing to do with that great Ship, *said she*, with some warmth; and I begin to apprehend myself in some danger on such a Whirlygig as you have made of the Earth. There is no danger, *replied I*; but, Madam, if you are afraid, we will have the Earth supported by four Elephants, as the *Indians* believe it. Hey-day, *cry'd she*, here's another System; however, I love those People for taking care of themselves; they have a good Foundation to trust to, while you *Copernicans* are a little too venturous with the Celestial Matter: and yet I fancy, if the *Indians* thought the Earth in the least danger of sinking, they would double

their number of Elephants. They would do well, *said I*, laughing at her Fancy, who would ſleep in fear? and if you have occaſion for 'em to-night, we will put as many as you pleaſe in our Syſtem; we can take 'em away again by degrees, as you grow better confirm'd. I do not think 'em very neceſſary, *ſaid ſhe;* I have Courage enough to turn. You ſhall turn with pleaſure, Madam, *ſaid I*, and ſhall find delightful Ideas in this Syſtem: For example, ſometimes I fancy my ſelf ſuſpended in the Air, without any Motion, while the Earth turns round me in 24 Hours; I ſee I know not how many different Faces paſs under me, ſome white, ſome black, and ſome tauny; ſometimes I ſee Hats, and ſometimes Turbants; now Heads with Hair, and then ſhav'd Heads; here I ſee Cities with Steeples, others with Spires and Creſcents, others with Towers of Porcelain, and anon great Countreys with nothing but Cottages: here I ſee vaſt Oceans, and there moſt horrible Deſerts: In ſhort, I diſcover the

the infinite Variety which is upon the Surface of the Earth. I confeſs, *ſaid ſhe*, 24 Hours would thus be very well beſtow'd, ſo we were in the ſame Place where we are now: I do not mean in the Park; but we will ſuppoſe ourſelves in the Air, other People continually paſſing by, who take up our Place, and at the end of 24 Hours we return to it again.

Copernicus himſelf, *ſaid I*, could not have comprehended it better: Firſt then, we ſee ſome of our Neighbours paſſing by us, up to the ears in Politicks, yet ſettling their Nation no better than we do the World in the Moon; then follows a great Sea, perhaps a Fleet of Ships, perhaps a Mackrel-Boat, no matter whether; then come ſome of the *Iroquois* going to eat a Priſoner for their Breakfaſt, who ſeems as little concern'd as his Devourers; after, appear the Women of the Land of *Jeſſo*, who ſpend all their time in dreſſing their Husbands Dinners and Suppers, and painting their Lips and Eyebrows blue, only to pleaſe the greateſt Brutes in the

World; then the fair *Circaſſians*, who are very free of their Favours, and grant all to the firſt Comer, except a little they reſerve for their Husbands; then the *Tartars* going to ſteal Concubines for the *Turks* and *Perſians*; and at laſt our own dear Countrymen, it may be in ſome Points as ridiculous as the beſt of 'em. It is very pleaſant, *ſaid the Marchioneſs*, but to imagine what you tell me: tho' if I were above, and ſaw all this, I would have the liberty to haſten or retard the Motion of the Earth, according as the Objects pleas'd me more or leſs; and I aſſure you I ſhould quickly ſend packing the *Politicians* and *Man-eaters*, but ſhould have a great Curioſity for the fair *Circaſſians*, for methinks they have a Cuſtom very particular. But I have a Difficulty to clear, and you muſt be ſerious. As the Earth moves, the Air changes every Moment, ſo we breathe the Air of another Country. Not at all, *reply'd I*; for the Air which encompaſſes the Earth, does not extend above a certain Height, perhaps 20 Leagues; it follows

lows us, and turns with us. Have you not seen the Work of a Silk-Worm, the Shells in which those little Animals imprison themselves, and weave with so much Art? they are made of a Silk very close, but are cover'd with a Down very slack and soft: So the Earth, which is solid, is cover'd from the Surface 20 Leagues upwards with a kind of Down, which is the Air, and like the Shell of the Silk-Worm turns at the same time. Beyond the Air is the Celestial Matter, incomparably more pure and subtle, and much more agitated than the Air. Your Comparison, *said she*, is somewhat mean, and yet what Wonders are wrought, what Wars, what Changes in this little Shell? 'Tis true, *I replied*; but Nature takes no notice of such little particular Motions, but drives us along with the general Motion, as if she were at Bowls. Methinks, *said she*, 'tis very ridiculous to be upon a thing that turns, and yet not be well assur'd that it does turn; and to tell you the truth, I begin to distrust the Reasons you give why we should not be sensible of the Motion of

the Earth; for is it poſſible there ſhould not ſome little Mark be left, by which we might perceive it?

All Motions, *ſaid I*, the more common and natural they are, are the leſs perceptible; and this holds true even in Morality. The Motion of Self-love is ſo natural to us, that for the moſt part we are not ſenſible of it, and we believe we act by other Principles. You are Moralizing, *ſaid ſhe*, to a Queſtion of Natural Philoſophy: But 'tis enough for the firſt time; let us now go home, and meet here again to-morrow, you with your Syſtems, and I with my Ignorance.

In returning back to the Caſtle, that I might ſay all I could on the Subject, I told her of a third Syſtem, invented by *Tycho Brahé*, who had fix'd the Earth in the Centre of the World, turn'd the Sun round the Earth, and the reſt of the Planets round the Sun; for ſince the new Diſcoveries, there was no way left to have the Planets turn round the Earth. But the Marchioneſs, who had a quick Apprehenſion, ſaid, ſhe thought it wa

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too affected, among so many great Bodies, to exempt the Earth only from turning round the Sun; that it was improper to make the Sun turn round the Earth, when all the Planets turn round the Sun: and that tho' this System was to prove the Immobility of the Earth, yet she thought it very improbable. So we resolv'd to stick to *Copernicus*, whose Opinion we thought most uniform, probable and diverting. In short, the Simplicity of his System convinces us, and the Boldness of it surprizes with Pleasure.

The Second Evening.

That the Moon *is an Habitable World.*

NEXT Morning I ſent to the Marchioneſs's Apartment, to know how ſhe had reſted, and whether the Motion of the Earth had not diſturbed her? She ſent word back, ſhe began to be accuſtomed to it, and that ſhe had ſlept as well or better than *Copernicus* himſelf. Soon after, there came ſome Neighbours to dinner, who, according to the tireſome rural Cuſtom, ſtaid till Evening, and were very obliging in going then; for the Country alſo gives a Privilege of extending their Viſit to the next Morning, if they are ſo diſpoſed: when they were gone, we walk'd again into the Park, and immediately fell upon our Syſtems. She ſo well conceiv'd what I told her the Night before, that ſhe deſired

ſired I would proceed without any Repetition. Well, Madam, *ſaid I*, ſince the Sun, which is now immoveable, has left off being a Planet, and the Earth which turns round him, is now become one, you will not be ſurpriz'd when you hear that the Moon is an Earth too, and that ſhe is inhabited as ours is. I confeſs, *ſaid ſhe*, I have often heard talk of the World in the Moon, but I always look'd upon it as viſionary, and mere Fancy. And it may be ſo ſtill, *ſaid I*; I am in this caſe as People in a Civil War, where the uncertainty of what may happen makes 'em hold intelligence with the oppoſite Party, and correſpond with their very Enemies: for tho' I verily believe the Moon is inhabited, I live civilly with thoſe who do not believe it; and I am (like ſome honeſt Gentlemen in point of Religion) ſtill ready to embrace the prevailing Opinion: but 'till the Unbelievers have a more conſiderable Advantage, I am for the People in the Moon.

Suppoſe there had never been any Communication between *Paris* and *St. Dennis*,

Dennis, and a Cockney who was never beyond the Walls of this City, saw *St. Dennis* from the Towers of *Notre-Dame*, you ask him if he believes *St. Dennis* is inhabited as *Paris* is? He presently answers, No: for, *says he*, I see People at *Paris*, but none at *St. Dennis*, nor did I ever hear of any there. 'Tis true, you tell him, that from the Towers of *Notre-Dame* he cannot perceive any Inhabitants at *St. Dennis*, because of the Distance; but all that he does discover of *St. Dennis*, very much resembles what he sees at *Paris*, the Steeples, Houses, Walls, *&c.* so that it may very well be inhabited as *Paris* is: all this signifies nothing, my Cockney still persists, that *St. Dennis* is not inhabited, because he sees no body there. The Moon is our *St. Dennis*, and every one of us as mere Cockneys as he that never was out of his own City. You are too severe, *said she*, upon your Fellow-Citizens; we are not all sure so silly as your Cockney; since *St. Dennis* is just as *Paris* is, he is a Fool, if he does not think it inhabited: But the Moon

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is not at all like the Earth. Have a care what you say, *reply'd I*; for if the Moon resembles the Earth, you are under a necessity to believe it inhabited. If it be so, *said she*, I own I cannot be dispens'd from believing it; and you seem so confident of it, that I fear, I must, whether I will or no. 'Tis true, the two Motions of the Earth, (which I could never imagine till now) do a little stagger me as to all the rest: But yet how is it possible the Earth should enlighten as the Moon does, without which they cannot be alike? If that be all, *said I*, the Difference is not great, for 'tis the Sun which is the sole Fountain of Light: that Quality proceeds only from him; and if the Planets give Light to us, it is because they first receive it from the Sun: the Sun sends Light to the Moon, and she reflects it back on the Earth: the Earth in the same manner receives Light from the Sun, and sends it to the Moon; for the Distance is the same between the Earth and the Moon, as between the Moon and the Earth. But is the Earth, *said the Marchioness*,

chioneſs, as fit to ſend back the Light of the Sun, as the Moon is? You are altogether for the Moon, *ſaid I*, ſhe is much oblig'd to you; but you muſt know that Light is made up of certain little Balls, which rebound from what is ſolid, but paſs thro' what admits of an entrance in a right Line, as Air or Glaſs; ſo that what makes the Moon enlighten us, is, that ſhe is a firm and ſolid Body, from which the little Balls rebound: and we muſt deny our Senſes, if we will not allow the Earth the ſame Solidity. In ſhort, the Difference is how we are ſeated; for the Moon being at ſo vaſt a diſtance from us, we can only diſcover her to be a Body of Light, and do not perceive that ſhe is a great Maſs, altogether like the Earth: whereas, on the contrary, becauſe we are ſo near the Earth, we know her to be a great Maſs, proper to furniſh Proviſion for Animals, but do not diſcover her to be a Body of Light, for want of the due diſtance. It is juſt ſo with us all, *ſaid the Lady*; we are dazzled with the Quality and Fortune of thoſe who are above us; when, do

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but look to the bottom, and we are all alike.

Very true, *said I*, we would judge of all things, but ſtill ſtand in the wrong place: we are too near to judge of ourſelves, and too far off to know others. So that the true way to ſee things as they are, is to be between the Moon and the Earth, to be purely a Spectator of this World, and not an Inhabitant. I ſhall never be ſatisfy'd, *ſaid ſhe*, for the Injuſtice we do the Earth, and the too favourable Opinion we have of the Moon, 'till you aſſure me that the People in the Moon are as little acquainted with their Advantages as we are with ours, and that they take our Earth for a Planet, without knowing theirs is one too. Do not doubt it, *ſaid I*; we appear to them to perform very regularly our Function of a Planet. 'Tis true, they do not ſee us make a Circle round them, but that is no great matter. That half of the Moon which was turn'd towards us at the beginning of the World, hath been turn'd towards us ever ſince; and thoſe Spots in her, which

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we have thought to look like a Face, with Eyes, Nose, and Mouth, are still the same; and if the other opposite half should appear to us, we should no doubt fancy another Figure from the different Spots that are in it: Not but that the Moon turns upon herself, and in the same time that she turns round the Earth, that is, in a Month; but while she is making that turn upon herself, and that she would hide a Cheek, for example, and appear somewhat else to us, she makes a like part of her Circle round the Earth, and still presents to us the same Cheek: so that the Moon, who in respect of the Sun and Stars, turns round herself, in respect of us, does not turn at all: they seem to her to rise and set in the space of fifteen Days; but for our Earth, it appears to her to be held up in the same place of the Heavens. 'Tis true, this apparent Immobility is not very agreeable for a Body which should pass for a Planet, but it is not altogether perfect; the Moon has a kind of trembling, which causes a little Corner of her Face to be sometimes hid

hid from us, and a little Corner of the oppoſite half appears; but then, upon my word, ſhe attributes that trembling to us, and fancies that we have in the Heavens the Motion of a *Pendulum*, which vibrates to and fro.

I find, *ſays the Marchioneſs*, the Planets are juſt like us; we caſt that upon others which is in ourſelves; the Earth ſays, *'Tis not I that turn, 'tis the Sun;* the Moon ſays, *'Tis not I that ſhake, 'tis the Earth*; the World is full of Error. But I would not adviſe you, *ſaid I*, to undertake the reforming it; you had better convince yourſelf of the entire Reſemblance of the Earth and the Moon. Imagine then theſe two great Bowls ſuſpended in the Heavens, you know that the Sun always enlightens the one half of a Body that is round, and the other half is in the Shadow: there is then one half of the Earth, and one half of the Moon, which is enlightned by the Sun; that is, one half which is Day, and the other half which is Night. Obſerve alſo, that as a Ball has leſs

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Force after it has been ſtruck againſt a Wall, and rebounds to the other ſide; ſo Light is weakned when it is reflected. The pale Light which comes to us from the Moon, is the very Light of the Sun; but it cannot come to us from the Moon but by Reflexion: it has loſt much of the Force and Luſtre it had when it came directly from the Sun upon the Moon; and that bright Light which ſhines directly upon us from the Sun, and which the Earth reflects upon the Moon, is as pale and weak when it arrives there: So that the Light which appears to us in the Moon, and which enlightens our Nights, is the Part of the Moon which has Day; and that Part of the Earth which has Day, when it is oppoſite to the Part of the Moon which has Night, gives Light to it. All depends upon this, how the Moon and the Earth behold one another. At the beginning of the Month, we do not ſee the Moon, becauſe ſhe is between the Sun and us; that half of her which has Day, is then turned toward the Sun; and that half which has Night,

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is turned towards us; we cannot see it then, because it has no Light upon it: but that half of the Moon which has Night, being turned to the half of the Earth which has Day, sees us without being perceiv'd; and we then appear to them just as the Full-Moon does to us. So that, as I may say, the People of the Moon have then a full Earth; but the Moon being advanc'd upon her Circle of a Month, comes from under the Sun, and begins to turn towards us a little corner of the half which is Light; which is the Crescent: then those Parts of the Moon which have Night, do not see all that half of the Earth which has Day, and we are then in the Wain to them.

I comprehend you very well, *said the Lady*; the People in the Moon have a Month quite contrary to us; when we have a full Moon, their half of the Moon which is light, is turned to our half of the Earth which is dark; they do not see us at all; and they have then a new Earth, this is plain. But now tell me how come the Eclipses? You may easily

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gueſs that, *ſaid I*; when it is new Moon, ſhe is between the Sun and us, and all her dark half is turned towards us who have Light, that obſcure Shadow is caſt upon us; if the Moon be directly under the Sun, that Shadow hides him from us, and at the ſame time obſcures a part of that half of the Earth which is light; this is ſeen by that half of the Moon which is dark: here then is an Eclipſe of the Sun to us during our Day, and an Eclipſe of the Earth to the Moon during her Night. When it is full Moon the Earth is between her and the Sun, and all the dark half of the Earth is turned towards all the light half of the Moon; the Shadow then of the Earth caſts itſelf towards the Moon, and if it falls on the Moon, it obſcures that light half which we ſee, which has then Day, and hinders the Sun from ſhining on it. Here then is an Eclipſe of the Moon to us during our Night, and an Eclipſe of the Sun to the Moon during her Day: but the reaſon that we have not Eclipſes every time that the Moon is between the Sun and the Earth,

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or the Earth between the Sun and the Moon, is, becauſe theſe three Bodies are not exactly placed in a right Line; and by conſequence that which ſhould make the Eclipſe, caſts its Shadow a little beſide that which ſhould be obſcured.

I am ſurprized, *ſaid the Marchioneſs*, that there ſhould be ſo little Myſtery in Eclipſes, and that the whole World ſhould not know the Cauſe of 'em. They never will, *ſaid I*, as ſome People go about it. In the *Eaſt-Indies*, when the Sun and the Moon are in Eclipſe, they believe a certain Devil who has black Claws, is ſeizing on thoſe Planets with his Talons; and during that time the Rivers are covered with the Heads of *Indians*, who are up to the Neck in Water, becauſe they eſteem it a very devout Poſture, to implore the Sun and the Moon to defend them againſt the Devil. In *America*, they are perſuaded that the Sun and the Moon, when eclipſed, are angry, and what is it they will not do to be reconciled with them? The *Greeks*, who were ſo refined, did they not believe the

the Moon was enchanted, and that the Magicians forced her to descend from Heaven, and shed a dangerous Juice on the Plants? Nay, what a Panic were we in, not many Years ago, at an Eclipse of the Sun? How many People hid themselves in their Cellars; and all the Philosophers could not persuade them to come out 'till the Eclipse was over?

Methinks, *said she*, 'tis scandalous for Men to be such Cowards; there ought to be a general Law made to prohibit the discoursing of Eclipses, that we might not call to mind the Follies that have been said and done upon that Subject. Your Law then, *said I*, must abolish even the Memory of all things, and forbid us to speak at all, for I know nothing in the World which is not a Monument of the Folly of Man.

But what do you think, *said she*, of the People in the Moon; are they as fearful of an Eclipse as we are? It would be a good Jest to see the *Indians* there up to the Neck in Water; that the *Americans* should believe the Earth angry

angry with them; the *Greeks* fancy we were bewitched, and would destroy their Plants; in short, that we should cause the same Consternation among them, as they do here. And why not, *said I?* I do not doubt it at all; for why should the People of the Moon have more Wit than we? What Right have they to affright us, and not we them? For my part, I believe that since a prodigious Company of Men have been, and still are such Fools to adore the Moon, there certainly are People in the Moon that worship the Earth, and that we are upon our Knees the one to the other. But sure, *said she*, we don't pretend to send any Influences to the Moon, and to give a Crisis to her Sick; if the People have any Wit in those Parts, they will soon destroy the Honour we flatter ourselves with, and I fear we shall have the Disadvantage.

Fear it not, Madam, *said I*; do you think we are the only Fools of the Universe? Is it not common for Ignorance to spread itself every where? 'Tis true, we can only guess at the Folly of the

People

People in the Moon, but I no more doubt it, than I do the moſt authentick News that comes from thence. What News comes from thence, *ſaid ſhe?* That which the Learned bring us, *I replied*, who travel thither every Day with their Tubes and Teleſcopes: they will tell you of their Diſcoveries there, of Lands, Seas, Lakes, high Mountains, and deep Abyſſes.

I fancy indeed, *ſaid ſhe*, they may diſcover Mountains and Abyſſes, becauſe of the remarkable Inequality; but how do they diſtinguiſh Lands and Seas? Very eaſily, *ſaid I*; for the Waters letting part of the Light paſs thro' them, ſend back but a very little, ſo that they appear afar off like ſo many dark Spots; whereas the Lands being ſolid, reflect the whole Light, and appear to be more bright and ſhining. The illuſtrious Monſieur *Caſſini*, a moſt compleat Aſtronomer, has diſcovered ſomething in the Moon which divided, then re-united, and ſunk in a kind of Well: we may very probably ſuppoſe this was a River. Nay, they pretend to be ſo well

well acquainted with the ſeveral Places, that they have given them all Names: one they call *Copernicus*, another *Archimedes*, another *Galilæus*: there is the *Caſpian Sea*, the *Black Lake*, the *Porphyrite Mountains*: in ſhort, they have publiſh'd ſuch exact Deſcriptions of the Moon, that a very Almanack-maker will be no more to ſeek there, than I am in *Paris*.

I muſt own then, *ſaid the Marchioneſs*, they are very exact; but what do they ſay to the Inſide of the Country? I would very fain know that. 'Tis impoſſible, *I replied*; the moſt learned Aſtronomers of our Age cannot inform you. You muſt ask that of *Aſtolfo*, who was carried into the Moon by St. *John*. I am going to tell you one of the agreeable Follies of *Arioſto*, and I am confident you will be well pleaſed to hear it: I muſt confeſs he had better have let alone St. *John*, whoſe Name is ſo worthy of Reſpect; but 'tis a poetical Licence, and muſt be allowed. The Poem is called ORLANDO FURIOSO, is dedicated to a Cardinal, and a great

Pope has honoured it with his Approbation, which is prefix'd to several of the Editions. This is the Argument; Orlando, *Nephew to* Charlemain, *runs mad because the fair* Angelica *prefers* Medore *before him.* Astolfo, *a Knight-Errant, finding himself one day in the terrestrial Paradise, which was upon the top of a very high Mountain, where he was carried by his flying Horse, meets St.* John, *who tells him, if he would have* Orlando *cured, he must make a Voyage with him into the Moon.* Astolfo, *who had a great mind to see new Countries, did not stand much for entreaty; and immediately there came a fiery Chariot, which carried the Apostle and the Knight up into the Air.* Astolfo *being no great Philosopher, was surprized to find the Moon so much bigger than it appeared to him when he was upon the Earth; to see Rivers, Seas, Mountains, Cities, Forests, nay, what would have surprized me too, Nymphs hunting in those Forests: but that which was most remarkable, was a Valley where you might find any thing*

that

that was loſt in our World, of what nature ſoever; Crowns, Riches, Fame, and an Infinity of Hopes; the Time we ſpend in Play, and in ſearching for the Philoſopher's-Stone; the Alms we give after our Death, the Verſes we preſent to great Men and Princes, and the Sighs of Lovers. I know not, *ſaid the Marchioneſs*, what became of the Sighs of Lovers in *Arioſto*'s time, but I fancy there are very few of them aſcend to the Moon in our days. Ah, Madam, *replied I*, how many does your Ladyſhip ſend thither every day? Thoſe that are addreſſed to you, will make a conſiderable Heap; and I aſſure you the Moon keeps all ſafe that is loſt here below. Yet I muſt tell you, *Arioſto* does but whiſper it, though every thing is there, even the Donation of *Conſtantine*, (the Popes having pretended to be Maſters of *Rome* and *Italy* by virtue of a Donation which the Emperor *Conſtantine* made *Sylveſter*; and the truth is, nobody knows what is become of it.) But what do you think is not to be found in the Moon? Folly; all that

ever was upon the Earth is kept there ſtill; but in lieu of it, it is not to be imagin'd how many Wits (if I may ſo call them) that are loſt here, are got up into the Moon; they are ſo many Vials full of a very ſubtile Liquor, which evaporates immediately, if it be not well ſtopp'd; and upon every one of theſe Vials the Names are written to whom the Wits belong; I think *Arioſto* has heap'd 'em upon one another a little confuſedly; but for order ſake, we will fancy 'em plac'd upon Shelves in a long Gallery. *Aſtolfo* wonder'd to ſee ſeveral Vials full, inſcribed with the Names of Perſons whom he thought conſiderable for their Wiſdom. To confeſs the truth, I begin to fear, ſince I have entertained you with theſe Philoſophical and Poetical Viſions, mine there is not very empty: however, 'tis ſome Conſolation to me, that while you are ſo attentive, you have a little Glaſs full, as well as your humble Servant. The good Knight found his own Wits among the reſt, and with the Apoſtle's leave ſnuff'd it all up his Noſe, like

like so much *Hungary*-Water; but *Arioſto* said, he did not carry it far, it returned again to the Moon a little after.

* ——*The Love of one fair Northern Laſs,*
Sent back his Wit unto the Place it was.

Well, he did not forget *Orlando*'s Vial, which was the occaſion of his Voyage; but he was curſedly plagued to carry it, for *Heroes* Wits are naturally very heavy, and there did not want one Drop of it. To conclude, *Arioſto*, according to his laudable Cuſtom, addreſſes himſelf to his Miſtreſs in the following beautiful Verſes:

Fair Miſtreſs, who for me to Heaven ſhall fly,
To bring again from thence my wandring Wit?
Which I ſtill loſe, ſince from that piercing Eye,
The Dart came forth that firſt my Heart did hit:
Nor of my loſs at all complain would I,
Might I but keep that which remaineth yet:
But if it ſtill decreaſe, within ſhort ſpace,
I doubt I ſhall be in Orlando*'s Caſe.*

* *Sir* J. Harrington*'s Tranſlation of* Orlando Furioſo, lib. 36.

Yet, well I wot where to recover mine,
Tho' not in Paradise, nor Cynthia's *Sphere,*
Yet doubtless in a Place no less divine,
In that sweet Face of yours, in that fair Hair,
That ruby Lip, in those two starlike Eyes,
There is my Wit, I know it wanders there;
And with my Lips, if you would give me leave,
I there would search, I thence would it receive.

Is not this very merry? To reason like *Ariosto*, the safest way of losing our Wits is to be in love; for you see they do not go far from us, we may recover 'em again at our Lips; but when we lose 'em by other means, as for example, by philosophizing, whip they are gone into the Moon, and there is no coming at em again when we would. However, *said the Marchioness*, our Vials have an honourable Station among the Philosophers, when 'tis forty to one but Love fixeth our Wits on an Object we cannot but be asham'd of. But to take away mine entirely, pray tell me, but tell me seriously, if you believe there are any Men in the Moon; for methinks hitherto

therto you have not been very positive. For my part, *said I*, I do not believe there are Men in the Moon: for do but observe how much the Face of Nature is changed between this and *China*; other Visages, Shapes, Manners, nay, almost other Principles of Reason; and therefore between us and the Moon, the Alteration must be much more considerable. In the Lands that have been lately discovered, we can scarce call the Inhabitants Men; they are rather Animals of human Shape, and that too sometimes very imperfect, almost without human Reason: he therefore who will travel to the Moon, must not expect to find Men there.

What sort of People are they then, *said she*. Troth, Madam, *said I*, I know not; for put the case that we ourselves inhabited the Moon, and were not Men, but rational Creatures, could we imagine, do you think, such fantastical People upon the Earth as Mankind is? Is it possible we should have an Idea of so strange a Composition, a Creature of such foolish Passions, and

ſuch wiſe Reflections; allotted ſo ſmall a Span of Life, and yet purſuing Views of ſuch extent; ſo learned in Trifles, and ſo ſtupidly ignorant in Matters of the greateſt importance; ſo much concerned for Liberty, and yet ſuch great Inclinations to Servitude; ſo deſirous of Happineſs, and yet ſo very incapable of attaining it? The People in the Moon muſt be wiſe indeed to ſuppoſe all this of us. But do we not ſee ourſelves continually, and cannot ſo much as gueſs how we were made? So that we are forc'd to ſay the Gods, when they created us, were drunk with Nectar, and when they were ſober again, could not chuſe but laugh at their own handy-work. Well, well, *ſaid the Marchioneſs*, we are ſafe enough then, they in the Moon know nothing of us; but I could wiſh we were a little better acquainted with them; for it troubles me that we ſhould ſee the Moon above us, and yet not know what is done there. Why, *ſaid I*, are you not as much concerned for that part of the Earth which is not yet diſcovered? What Creatures inhabit

bit it, and what they do there? for we and they are carried in the same Vessel: they possess the Prow, and we the Poop, and yet there is no manner of Communication between us; they do not know at one End of the Ship, who lives, or what is done at the other, and you would know what passes in the Moon, which is another great Vessel sailing in the Heavens, at a vast distance from us.

Oh, *said she*, as for the Earth, I reckon it all as good as discovered, and can guess at the People, tho' I never heard a word of 'em; for certainly they all resemble us very much, and we may know 'em better whenever we will, let them stay where they are, 'tis only going to see 'em; but we cannot get into the Moon if we would; so that I despair of knowing what they do there. You would laugh at me, *said I*, if I should answer you seriously; perhaps I may deserve it; and yet, I fancy, I can say a great deal to justify a ridiculous Thought that is just now come into my head: nay, to use the Fool's

beſt Argument, I'll lay a Wager I make you own (in ſpite of Reaſon) that one of theſe days there may be a Communication between the Earth and the Moon, and who knows what great Advantages we may procure by it? Do but conſider *America*, before it was diſcovered by *Columbus*, how profoundly ignorant were thoſe People? they knew nothing at all of Arts and Sciences; they went naked, had no other Arms but a Bow and Arrows, and did not conceive they might be carried by Animals: they look'd upon the Sea as a wide Space, not for the Uſe of Man, but thought it was join'd to the Heavens, and that beyond it was nothing. 'Tis true, after having ſpent whole years in making hollow the Trunks of great Trees with ſharp Stones, they put themſelves to Sea in theſe Trunks, and floated from Land to Land, as the Wind and Waves drove them: But how often was their Trough overſet, and they forced to recover it again by ſwimming? So that (except when they were on the Land) it might be ſaid they were con-

continually ſwimming: and yet had any one but told 'em of another kind of Navigation, incomparably more perfect and uſeful than their own; that they might eaſily paſs over that infinite Space of Water; that they might ſtop in the middle of the Waves, and in ſome ſenſe command the Winds, and make their Veſſel go faſt or ſlow, as they pleas'd: in ſhort, that this unpaſſable Ocean ſhould be no Obſtacle to their converſing with another different People; do you think they would have believed you? And yet at laſt that day is come: the unheard-of and moſt ſurprizing Sight appears, vaſt great Bodies, with white Wings, are ſeen to fly upon the Sea, to vomit Fire from all Parts, and to caſt on their Shores an unknown People, all ſcaled with Iron, who diſpoſe and govern Monſters as they pleaſe, carry Thunder in their hands, and deſtroy whoever reſiſts them. From whence came they? Who brought them over the Sea? Who gave to them the diſpoſal of the Fire of Heaven? Are they

Gods? Are they the Offspring of the Sun? for certainly they are not Men. Do but consider, Madam, the Surprize of the *Americans*; there can be nothing greater: and after this, shall any one say, there shall never be a Communication between the Moon and the Earth? Did the *Americans* believe there would ever be any between them and *Europe*, 'till they saw it? 'Tis true, you must pass this great Space of Air and Heaven, which is between the Earth and the Moon; but did not those vast Seas seem at first as impassable to the *Americans?* You rave, I think, *said she.* Who denies it, Madam, *says I?* Nay, but I will prove it, *says she*; I do not care for your bare owning it: Did you not own the *Americans* were so ignorant, that they had not the least Conception of crossing the Sea? but we who know a great deal more than they, can imagine and fancy the going through the Air, tho' we are assured it is not to be done. There is somewhat more in it than Fancy, *I replied*, when it has been already practis'd; for

several

ſeveral have found the Secret of faſtening Wings, which bear them up in the Air, to move them as they pleaſe, and to fly over Rivers, and from Steeple to Steeple. I cannot ſay, indeed, they have yet made an Eagle's Flight, or that it does not coſt now and then a Leg or an Arm to one of theſe new Birds; but this may ſerve to repreſent the firſt Planks that were launch'd on the Water, and which were the very beginning of Navigation. There were no Veſſels then thought of to ſail round the World in; and yet you ſee what great Ships are grown by little and little from thoſe firſt Planks. The Art of Flying is but newly invented; it will improve by degrees, and in time grow perfect, then we may fly as far as the Moon. We do not yet pretend to have diſcover'd all things, or that what we have diſcover'd can receive no Addition; and therefore, pray let us agree there are yet many things to be done in the Ages to come. Were you to live a thouſand Years, *ſaid the Marchioneſs*, I can never believe you will fly, but

but you must endanger your Neck. I will not, *replied I*, be so unmannerly as to contradict a fair Lady; but tho' we cannot learn the Art here, I hope you will allow they may fly better in the Moon: 'tis no great matter whether we go to them, or they come to us; we shall then be like the *Americans* who knew nothing of Navigation, and yet there were very good Ships at t'other end of the World. Were it so, *said she*, the People in the Moon would have been here before now. All in good time, *said I*; the *Europeans* were not in *America*, 'till at the end of some thousands of Years; so long were they in improving Navigation to the point of crossing the Ocean. The People in the Moon have already made some short Voyages in the Air; they are exercising continually, and by degrees will be more expert; and when we see 'em, God knows how we shall be surpriz'd. It is unsufferable, *said she*, you should banter me at this rate, and justify your ridiculous Fancy by such false Reasoning.

Reasoning. I am going to demonstrate, *said I*, that you reproach me very unjustly. Consider, Madam, that the World is unfolded by degrees; for the Antients were very positive, that the Torrid and Frigid Zones were not inhabitable, by reason of their excessive Heat and Cold: and in the time of the *Romans* the general Map of the World was but very little extended beyond that of their own Empire; which, tho' in one sense, express'd much Grandeur, in another sense, was a Sign of as great Ignorance: however, there were Men found both in very hot and in very cold Countries; so that you see the World is already increas'd. After that, it was thought that the Ocean cover'd the whole Earth, except what was then discover'd; there was no talk then of the Antipodes, not so much as a thought of 'em; for who could fancy their Heels at top, and their Heads at bottom? and yet after all their fine Reasoning, the Antipodes were discover'd. Here's now another half of the World starts up, and a new Reformation,

tion of the Map: Methinks this, Madam, ſhould reſtrain us, and teach us not to be ſo poſitive in our Opinions; the World will unfold itſelf more to us hereafter; then we ſhall know the People in the Moon as well as we do now the Antipodes. But all things muſt be done in order; the whole Earth muſt be firſt diſcover'd; and 'till we are perfectly acquainted with our own Habitation, we ſhall never know that of our Neighbours. Without fooling, *ſaid the Marchioneſs, looking earneſtly upon me*, you are ſo very profound in this Point, that I begin to think you are in earneſt, and believe what you ſay. Not ſo neither, *ſaid I*; but I would ſhew you how eaſy it is to maintain a chimerical Notion, that may perplex a Man of Underſtanding, but never convince him: there is not any Argument ſo perſuaſive as Truth, which has no need to exert all its Proofs, but enters naturally into our Underſtanding; and when once we have learn'd it, we do nothing but think of it. I thank you then, *ſaid ſhe*, for impoſing on me no longer;

longer; for I confeſs your falſe Reaſoning diſturb'd me, but now I ſhall ſleep very quietly, if you think fit to go home.

The-

The Third Evening.

Particulars of the World in the Moon, and Proofs of the other Planets being habitable.

THE Marchioness was so intent upon her Notions, that she would fain have engag'd me next day, to go on where I left off; but I told her, since the Moon and Stars were become the Subject of our Discourse, we should trust our Chimæra's with no body else. At Night we went again into the Park, which was now wholly dedicated to our learned Conversation.

Well, Madam, *said I*, I have great News for you; that which I told you last Night of the Moon's being inhabited, may not be otherwise now. There is a new Fancy got into my Head, which puts those People in great danger. I cannot suffer this, *said she*; yesterday you were

were preparing me to receive a Visit from the Lunarians, and now you would insinuate there are no such People in Nature: you must not trifle with me thus; once you would have me believe the Moon was inhabited; I surmounted the Difficulty I had, and did believe it. You are a little too nimble, *I reply'd;* did I not advise you never to be entirely convinc'd in things of this nature, but to reserve half of your Understanding free and disengag'd, that you might admit of the contrary Opinion, if there be any occasion? I care not for your Suppositions, *said she,* let us come to Matter of Fact. Are we not to consider the Moon as *St. Dennis?* No, *said I,* the Moon doth not so much resemble the Earth, as *St. Dennis* does *Paris:* The Sun draws from the Earth and Water, Exhalations and Vapours, which mounting to a certain height in the Air, do there assemble and form the Clouds; these uncertain Clouds are driven irregularly round the Globe, sometimes shadowing one Country, and sometimes another: he then who beholds the Earth from afar off,

will

will ſee frequent Alterations upon its Surface, becauſe a great Country, overcaſt with Clouds, will appear dark or light, as the Clouds ſtay, or paſs over it; he will ſee the Spots on the Earth often change their place, and appear or diſappear as the Clouds remove: but we ſee none of theſe Changes wrought upon the Moon, which would certainly be the ſame, were there but Clouds about her; but on the contrary, all her Spots are fix'd and certain, and her light parts continue where they were at firſt, which truly is a great Misfortune; for by this reaſon, the Sun draws no Exhalations or Vapours above the Moon; ſo that it appears ſhe is a Body infinitely more hard and ſolid than the Earth, whoſe ſubtile parts are eaſily ſeparated from the reſt, and mount upwards as ſoon as Heat puts them in motion; but it muſt be a heap of Rock and Marble, where there is no Evaporation: Beſides, Exhalations are ſo natural and neceſſary, where there is Water, that there can be no Water at all, where there is no Exhalation; and what

what ſort of Inhabitants muſt thoſe be, whoſe Country affords no Water, is all Rock, and produces nothing? Very fine, *ſaid ſhe*; you have forgot ſince you aſſur'd me, we might from hence diſtinguiſh Seas in the Moon. Pray, what is become of your *Caſpian Sea*, and your *Black Lake?* All Conjecture, Madam, *replied I*; tho' for your Ladyſhip's ſake, I am very ſorry for it: for thoſe dark places we took to be Seas, may perhaps be nothing but large Cavities; 'tis hard to gueſs right at ſo great a diſtance. But will this ſuffice then, *ſaid ſhe*, to extirpate the People in the Moon? Not altogether, *I replied*; we will neither determine for, nor againſt them. I muſt own my Weakneſs (if it be one) *ſaid ſhe*; I cannot be ſo perfectly undetermin'd as you would have me to be, but muſt believe one way, or the other; therefore pray fix me quickly in my Opinion, as to the Inhabitants of the Moon: preſerve or annihilate them, as you ſhall think fit; and yet methinks I have a ſtrange Inclination for 'em, and would not have 'em deſtroy'd,

if

if it were poſſible to ſave 'em. You know, Madam, *ſaid I*, I can deny you nothing; the Moon ſhall be no longer a Deſart, but to do you Service, we will repeople her. Since to all appearance the Spots in the Moon do not change, I cannot conceive there are any Clouds about her, that ſometimes obſcure one part, and ſometimes another; yet this does not hinder, but that the Moon ſends forth Exhalations, and Vapours. The Clouds which we ſee in the Air, are nothing but Exhalations and Vapours, which at their coming out of the Earth, were ſeparated into ſuch minute Particles, that they could not be diſcern'd; but as they aſcend higher, they are condens'd by the Cold, and by the re-union of their Parts, are render'd viſible; after which they become great Clouds, which fluctuate in the Air, their improper Region, 'till they return back again in Rain to us: however, theſe Exhalations and Vapours do ſometimes keep themſelves ſo diſpers'd, that they are imperceptible; or if they do aſſemble, it is in forming ſuch

ſuch ſubtile Dews that they cannot be diſcern'd to fall from any Cloud. For as it ſeems incredible that the Moon ſhould be ſuch a Maſs, that all its Parts are of an equal Solidity, all at reſt with one another, and all incapable of any alteration from the Efficacy of the Sun; I am ſure we are yet unacquainted with ſuch a Body: Marble itſelf is of another Nature; and even that which is moſt ſolid, is ſubject to change and alteration; either from the ſecret and inviſible motion it has within itſelf, or from that which it receives from without: it may ſo happen then, that the Vapours which iſſue from the Moon, may not aſſemble round her in Clouds, and may not fall back again in Rain, but only in Dews. It is ſufficient for this, that the Air with which the Moon is inviron'd, (for it is certain ſhe is ſo, as well as the Earth) ſhould be a little different from our Air, and the Vapours of the Moon be a little different from thoſe of the Earth, which is very probable. Hereupon the matter being otherwiſe diſpos'd in the Moon than on the Earth, the Effects muſt be

different;

different; tho' it is of no great conſequence whether they are or no: for from the moment we have found an inward motion in the parts of the Moon, or one produced by foreign Cauſes, here is enough for the new birth of its Inhabitants, and a ſufficient and neceſſary Fund for their Subſiſtence. This will furniſh us with Corn, Fruit, Water, and what elſe we pleaſe, I mean according to the cuſtom or manner of the Moon, which I do not pretend to know; and all proportion'd to the wants and uſes of the Inhabitants, with whom I pretend to be as little acquainted. That is to ſay, *replied the Marchioneſs*, you know all is very well, without knowing how it is ſo, which is a great deal of Ignorance founded upon a very little Knowledge: However, I comfort myſelf, that you have given the Moon her Inhabitants again, and have wrapp'd her in an Air of her own, without which a Planet would ſeem but very naked.

'Tis theſe two different Airs, Madam, that hinder the Communication of the two Planets: If it was only flying, as

I told you yesterday, who knows but we might improve it to perfection, tho' I confess there is but little hopes of it? The great Distance between the Moon and the Earth, is a Difficulty not easily to be surmounted: yet were the Distance but inconsiderable, and the two Planets almost contiguous, it would be still impossible to pass from the Air of the one into the Air of the other. The Water is the Air of Fishes, they never pass into the Air of the Birds, nor the Birds into the Air of the Fish; and yet 'tis not the Distance that hinders them, but both are imprison'd by the Air they breathe in. We find our Air consists of thicker and grosser Vapours than the Air of the Moon; so that one of her Inhabitants arriving at the Confines of our World, as soon as he enters our Air, will inevitably drown himself, and we shall see him fall dead on the Earth.

I should rejoice, *says the Marchioness*, at a Wreck of these Lunar Folks, as much as my Neighbours on the Coast of *Sussex*: how pleasant would it be to see 'em lie scattered on the Ground,

where we might consider at our ease their extraordinary Figures! But what, *said I*, if they should swim on the outward Surface of our Air, and be as curious to see us, as you are to see them; should they angle or cast a Net for us, as for so many Fishes, would that please you? Why not? *said the Marchioness, smiling.* For my part, I would go into their Nets of my own accord, were it but for the pleasure of seeing such strange Fishermen.

You would be very sick, *said I*, when you were drawn to the top of our Air; for there is no Respiration in all its extent, as may be seen on the tops of some very high Mountains: and I admire, that they who have the Folly to believe that *Fairies*, whom they allow to be corporeal, and to inhabit the most pure and refin'd Air, do not tell us, that the Reason why they give us such short and seldom Visits, is, that there are very few among them that can dive; and those that can, if it be possible to get through the thick Air where we are, cannot stay half so long in it, as one

one of your Diving Fowls can in the Water. Here then are natural Barricades, which defend the Paſſage out of our World, as well as the Entry into that of the Moon: ſo that ſince we can only gueſs at that World, let us fancy all we can of it. For Example. I will ſuppoſe that we may there ſee the Firmament, the Sun, and the Stars, of another Colour than what they are here; all theſe appear to us thro' a kind of natural Opticks, which change and alter the Objects. Theſe Spectacles, as we may call 'em, are our Air, mix'd as it is with Vapours and Exhalations, and which does not extend itſelf very high. Some of our modern Philoſophers pretend, of itſelf it is blue, as well as the Water of the Sea, and that this Colour neither appears in the one nor in the other, but at a great Depth: the Firmament, ſay they, where the fix'd Stars are placed, has no peculiar Light of its own, and by Conſequence muſt appear black; but we ſee it through the Air which is blue, and therefore it appears to us blue; which, if ſo, the Beams of the Sun and Stars cannot paſs thro'

the Air without being ting'd a little with its Colour, and loſing as much of their own: yet, were the Air of no Colour, it is very certain, that thro' a great Miſt, the Light of a Flambeau at ſome Diſtance appears reddiſh, tho' it be not its true natural Colour. Our Air is nothing but a great Miſt, which changes the true Colour of the Sky, Sun, and Stars; it belongs only to the celeſtial Matter to bring us the Light and Colours, as they really are in all their Purity: ſo that ſince the Air of the Moon is of another Nature than our Air, or is diverſified by another Colour, or at leaſt is another kind of Miſt, which varies the Colours of the Celeſtial Bodies; in ſhort, as to the People of the Moon, their Spectacles thro' which they ſee every thing, are chang'd.

If it be ſo, *ſaid the Marchioneſs*, I prefer this Abode before that of the Moon; for I cannot believe the Celeſtial Colours are ſo well ſuited as they are here; for Inſtance, if you put green Stars on a red Sky, they cannot be ſo agreeable as Stars of Gold on an Azure Firmament. To hear you, one would imagine

imagine, Madam, *ſaid I*, you were chuſing a Petticoat, or a ſuit of Knots: but believe me, Nature does not want Fancy; leave it to her to chuſe Colours for the Moon, and I'll engage they ſhall be well ſorted; ſhe will not fail to vary the Proſpect of the Univerſe, at every different point of Sight, and always the Alteration ſhall be very agreeable. I know very well, *ſaid the Marchioneſs*, her Skill in this Point; ſhe is not at the Charge of changing the Objects, but only the Spectacles, and has the Credit of this great Variety, without being at any Expence: with a blue Air ſhe gives us a blue Firmament; and perhaps with a red Air, ſhe gives to the Inhabitants of the Moon a red Firmament: and yet ſtill it is but the ſame Firmament; nay, I am of Opinion, ſhe has plac'd a ſort of Spectacles in our Imagination, thro' which we ſee all things, and which to every particular Man, change the Objects. *Alexander* look'd on the Earth as a fit Place to eſtabliſh a great Empire; it ſeem'd to *Celadon* a

proper Reſidence for *Aſtræa*, and it appear'd to a Philoſopher, a great Planet in the Heavens, cover'd with Fools. I do not believe the Sights vary more between the Earth and the Moon, than they do between one Man's Fancy and another's.

This Change in our Imaginations, *ſays I*, is very ſurprizing; for they are ſtill the ſame Objects, tho' they appear different; when in the Moon, we may ſee other Objects we do not ſee here, or at leaſt not ſee all there we do ſee here. Perhaps in that Country they know nothing of the Dawn and the Twilight, before the Sun riſes, and after the Sun ſets: the Air which encompaſſes, and is elevated above us, receives the Rays, ſo that they cannot ſtrike on the Earth; and being groſs, ſtops ſome of them, and ſends 'em to us, tho' indeed they were never naturally deſign'd us: ſo that the Day-break and the Twilight are a Favour which Nature beſtows on us; they are Lights which do not properly belong to us, and which ſhe gives us over and above

above our due. But in the Moon, where apparently the Air is more pure, and therefore not ſo proper to ſend down the Beams it receives from the Sun before his riſing, and after his ſetting, they have not that Light of Grace (as I may call it) which growing ſtronger by degrees, does more agreeably prepare them for the arrival of the Sun; and which growing weaker, and diminiſhing by degrees, does inſenſibly prepare them for the Sun's departure: but they are in a profound Darkneſs, where a Curtain (as it were) is drawn all on a ſudden, their Eyes are immediately dazzled with the whole Light of the Sun in all its Glory and Brightneſs; ſo likewiſe, they are on a ſudden ſurprized with utter Darkneſs; the Night and the Day have no medium between them, but they fall in a moment from one Extreme to the other. The Rainbow likewiſe is not known to the Inhabitants of the Moon; for if the Dawn is an effect of the groſſneſs of the Air and Vapours, the Rainbow is formed in the Clouds, from whence the Rain falls: ſo that the moſt

beautiful things in the World, are produced by thoſe which have no beauty at all. Since then there are no Vapours thick enough, nor no Clouds of Rain about the Moon, farewel Dawn, adieu Rainbow: What muſt Lovers do for Similies in that Country, when ſuch an inexhauſtible Magazine of Compariſons is taken from them?

I ſhall not much bemoan the loſs of their Similies or Compariſons, *ſays the Marchioneſs*, for I think them well enough recompenſed for the loſs of our Dawn and Rainbow; for by the ſame reaſon they have neither Thunder nor Lightning, both which are formed in the Clouds: How glorious are their Days, the Sun continually ſhining! how pleaſant their Nights, not the leaſt Star is hid from them! They never hear of Storms or Tempeſts, which certainly are plain effects of the Wrath of Heaven. Do you think then they ſtand in need of our Pity? You are deſcribing the Moon, *I reply'd*, like an inchanted Iſland; but do you think it ſo pleaſant to have a ſcorching Sun always over our Heads,

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and not the leaſt Cloud to moderate its Heat? Tho' I fancy 'tis for this reaſon that Nature hath made great Cavities in the Moon: we can diſcern 'em eaſily with our Teleſcopes, for they are not Mountains, but ſo many Wells or Vaults in the middle of a plain; and how do we know but the Inhabitants of the Moon, being continually broil'd by the exceſſive Heat of the Sun, do retire into thoſe great Wells? perhaps they live no where elſe, and 'tis there they build 'em Cities; for we ſtill ſee in the Ruins of old *Rome*, that that part of the City which was under-ground, was almoſt as large as that which was above-ground. We need but take that part away, and the reſt would remain like one of theſe Lunar Towns; the whole People reſide in Wells, and from one Well to another, there are ſubterraneous Paſſages for the Communication of the Inhabitants.

I perceive, Madam, you laugh at me; y t i I may be ſo free with a fair Lady, y u deſerve it much better than I: for y u believe the People in the Moon muſt live upon the Surface of their

Planet, becauſe we do ſo upon ours; but quite the contrary: for as we dwell upon the Superficies of our Planet, they ſhould not dwell upon the Superficies of Theirs: If things differ ſo much in this World, what muſt they do in another?

'Tis no matter, *ſaid the Marchioneſs*, I can never ſuffer the Inhabitants of the Moon to live in perpetual Darkneſs. You will be more concern'd for 'em, *I reply'd*, when I tell you, that one of the antient Philoſophers long ſince diſcover'd the Moon to be the Abode of the bleſſed Souls departed out of this Life, and that all their Happineſs conſiſted in hearing the Harmony of the Spheres, which is made by the Motion of the Celeſtial Bodies: And the Philoſopher pretending to know exactly all they do there, he tells you, that when the Moon is obſcured by the Shadow of the Earth, they no longer hear the heavenly Muſick, but howl like ſo many Souls in Purgatory; ſo that the Moon taking Pity of 'em, makes all the haſte ſhe can to get into the Light again.

Methinks

Methinks then, *says the Lady*, we ſhould now and then ſee ſome of the bleſſed Souls arrive here from the Moon; for certainly they are ſent to us. I confeſs indeed, *ſaid I*, it would be very pleaſant to ſee different Worlds; ſuch a Voyage, tho' but in Imagination, is very delightful; what would it be in Reality? It would be much better certainly than to go to *Japan*, which at beſt, is but crawling from one end of the Globe to t'other, and after all to ſee nothing but Men. Well then, *ſays ſhe*, let us travel over the Planets as faſt as we can; what ſhould hinder us? Let us place ourſelves at all the different Proſpects, and from thence conſider the Univerſe. But firſt, have we any thing more to ſee in the Moon? Yes Madam, ſays I, our Deſcription of that World is not quite exhauſted; you muſt remember, that the two Movements which turn the Moon on herſelf, and about us, being equal, the one always preſents to our Eyes that part of which the other muſt conſequently deprive us, and ſo ſhe always to us wears

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the ſame Face. We have then but one Moiety of her which looks on us; and as the Moon muſt be ſuppoſed not to turn on her own Center, in reſpect to us, that Moiety which ſees us always, and that which never ſees us, remains fixed in the ſame point of the Firmament. When it is Night with her, and her Nights are equal to fifteen of our Days, ſhe at firſt ſees but a little Corner of the Earth enlightned, after that a larger Spot, and ſo almoſt by hourly Gradations ſpreads her Light, till it covers the Face of the whole Globe; whereas theſe ſame Changes do not appear to us to affect the Moon, but from one Night to another; becauſe we loſe her a long time out of our Sight. I would give any thing that I could poſſibly fathom the awkard Reaſonings of the Philoſophers of their World upon our Earth's appearing immoveable to them, when all the other celeſtial Bodies riſe and ſet over their Heads within the Compaſs of fifteen Days: It is plain they attribute this Immobility to her Bigneſs, for ſhe is forty times larger than the Moon;

and

and when their Poets have a mind to extol indolent Princes, I doubt not but they take Care to compare their Inactivity to this majestic Repose of the Earth: However, this Opinion is attended with one Difficulty; they must very sensibly perceive in the Moon, that our Earth turns upon her own Center. For instance, suppose that *Europe*, *Asia*, and *America* present themselves one after another to them in Miniature, and in different Shapes and Figures, almost as we see them upon Maps: Now this Sight must be a Novelty to such Travellers, as pass from that Moiety of the Moon which never sees us, to that which always does. Ah! how cautious would they be of believing the Relation of the first Travellers, who should speak of it after their Return to that great Country, to which we are so entirely unknown! Now I fancy, *says the Marchioness*, they make a sort of Voyage from one Side of their Country to the other, to try to make Discoveries in our World; and that there are certain Honours and Privileges assigned to such as have, once in their Lives, had a View

of

of our great Planet. At leaſt, *replied I*, thoſe who have had this View, obtained the Privilege of being better lighted during their Nights; the Reſidence in the other Moiety of the Moon muſt of Neceſſity be much leſs commodious in that Reſpect. But now let us continue the Journey we propoſed to take from one Planet to another, for I think we have had a pretty curious Survey of the Moon, at leaſt, you have ſeen all I can ſhew you. Leaving the Moon on the Side next the Sun, we ſee *Venus*, which puts me again in mind of St. *Dennis*. *Venus* turns upon herſelf, and round the Sun, as well as the Moon; they likewiſe diſcover by their Teleſcopes, that *Venus*, like the Moon (if I may ſpeak after the ſame manner) is ſometimes new, ſometimes full, and ſometimes in the Wain, according to the different Situations ſhe is in with reſpect of the Earth.

The Moon, to all appearance, is inhabited; why ſhould not *Venus* be ſo too? You are ſo full of your Why's and your Wherefore's, *ſays the Marchioneſs, interrupting me*, that I fancy you are ſending Colonies

Colonies to all the Planets. You may be certain, Madam, *I reply'd*, that I will; for I see no reason to the contrary: We find that all the Planets are of the same Nature, all obscure Bodies, which receive no Light but from the Sun, and then send it to one another: their Motions are the same, so that hitherto they are alike; and yet, if we are to believe that these vast Bodies are not inhabited, I think they were made but to little Purpose: Why should Nature be so partial, as to except only the Earth? But let who will say the contrary, I must believe the Planets are peopled as well as the Earth. I find, *says the Marchioness with some Concern*, a Philosopher will never make a good Martyr, you can so quickly shift your Opinion; 'twas not many Minutes since, the Moon was a perfect Desert; now I see you would be very angry, if any one should say all the rest of the Planets are not inhabited. Why truly, Madam, *said I*, there is a time for all things; and your true Philosopher believes any thing, or nothing, as the Maggot bites. And this is not so very improbable

probable as you think it: For I cannot help thinking it would be very ſtrange, that the Earth ſhould be ſo well peopled, and the other Planets not inhabited at all; for do you believe we diſcover (as I may ſay) all the Inhabitants of the Earth? There are as many kinds of inviſible as viſible Creatures. We ſee from the Elephant to the very Piſmire, beyond which our Sight fails us; and yet, counting from that minute Creature, there are an Infinity of leſſer Animals, which would be imperceptible without the Aid of Glaſſes. But our magnifying Glaſſes ſhew us, that in the leaſt Drop of Rain-water, Vinegar, or any other Liquid, there are great Numbers of little Fiſhes or Serpents, which we could never have ſuſpected there; and Philoſophers believe, that the acid Taſte of theſe Liquids proceeds from a Sharpneſs iſſued thro' the forked Stings of theſe Animals, lodged under their Tongues; and further, that by mixing certain Things with any one of theſe Liquors, and letting them ſtand and corrupt, will produce a new Species of little Animals.

Several

Several, even of the moſt ſolid Bodies, are nothing but an immenſe Swarm of imperceptible Inſects. Do but conſider this Mulberry Leaf: It is a great World inhabited by Multitudes of theſe inviſible Worlds; it is to them a Country of a vaſt Extent; what Mountains, what Abyſſes are there in it! The Inſects of one ſide know no more of their Fellow-Creatures on t'other, than you and I can tell what they are now doing at the Antipodes: is it not reaſonable then to imagine that a great Planet ſhould be inhabited? In the hardeſt Stones, for example, in Marble there are an Infinity of Worms, which fill up the Vacuums, and feed upon the Subſtance of the Stone. Fancy then Millions of living Creatures to ſubſiſt many Years on a Grain of Sand; ſo that were the Moon but one continued Rock, I would rather ſhe ſhould be gnaw'd by theſe inviſible Mites than not be inhabited. In ſhort, every thing is animated. Imagine then thoſe Animals which are yet undiſcovered, and add them and thoſe which are but lately diſcovered, to thoſe we have always ſeen, you will

will find the Earth ſwarms with Inhabitants, and that Nature has ſo liberally furniſhed it with Animals, that ſhe is not in the leaſt concerned for our not ſeeing above one half of them. Why then ſhould Nature, which is fruitful to an Exceſs here, be ſo very barren as to produce no living Things in the reſt of the Planets? I muſt own, *ſaid the Marchioneſs*, you have convinc'd my Reaſon, but you have confounded my Fancy with ſuch Variety, that I cannot imagine how Nature, which hates Repetitions, ſhould produce ſo many different Kinds. There is no need of Fancy, *reply'd I*; do but truſt your Eyes, and you will eaſily perceive how Nature diverſifies in theſe ſeveral Worlds.

All human Faces in general are of the ſame Model, and yet the *Europeans* and the *Africans* have two particular Molds: nay, commonly every Family has a different Aſpect. What Secret then has Nature to ſhew ſo much Variety in a ſingle Face? Our World, in reſpect of the Univerſe, is but a little Family: where

where all the Faces bear ſome Reſemblance to each other; in another Place is another Family, whoſe Faces have quite a different Air and Make. The Difference too increaſes with the Diſtance; for whoſoever ſhould ſee an Inhabitant of the Moon, and an Inhabitant of the Earth, would ſoon perceive they were nearer Neighbours than one of the Earth, and one of *Saturn:* here, for Example, we have the uſe of Voice; in another World they ſpeak by Signs; and at a greater Diſtance they do not ſpeak at all. Here our Reaſon is form'd by Experience; in the next World, Experience contributes little towards it; and in the next to that, old Men know no more than Children. Here we are troubled more with what is to come, than with what is paſt: in the next World they are more troubled for what is paſt, than for what it to come: further off they are not concern'd with either, which, by the way, I think is much the better. Here 'tis thought we want a ſixth Senſe, which would teach us many things of which

we

we are now ignorant: this ſixth Senſe is apparently in another World, where they want one of the five which we enjoy. Nay, perhaps there is a much greater Number of Senſes; but in the Partition we have made of 'em with the Inhabitants of the other Planets, there are but five fallen to our Share, with which we are well contented, for want of being acquainted with the reſt. Our Sciences have Bounds, which the Wit of Man could never paſs; there is a Point where they fail us on a ſudden, the reſt is reſerved for other Worlds, where ſomewhat which we know, is unknown to them. This Planet enjoys the Pleaſures of Love, but lies deſolate in ſeveral Places by the Fury of War: in another Planet they enjoy perpetual Peace, yet in the midſt of that Peace, know nothing of Love, and Time lies on their Hands. In a Word, that which Nature practiſes here in little, in diſtributing her Gifts among Mankind, ſhe does at large in other Worlds, where ſhe makes uſe of that admirable Secret ſhe has to diverſify

diverſify all things, and at the ſame time makes 'em equal, by compenſating for the Inequality.

But is it not time, Madam, to be ſerious? how will you diſpoſe of all theſe Notions? Trouble not yourſelf, *ſays ſhe*, Fancy is a great Traveller: I already comprehend theſe ſeveral Worlds, and repreſent to myſelf their different Characters and Cuſtoms: ſome of 'em, I aſſure you, are very extraordinary. I ſee at this Moment a thouſand different Figures, tho' I cannot well deſcribe 'em. Oh leave them, *ſaid I*, to your Dreams: we ſhall know Tomorrow whether they repreſent the Matter faithfully, and what they have taught you in relation to the Inhabitants of any of the Planets.

The Fourth Evening.

Particulars of the Worlds of Venus, Mercury, Mars, Jupiter, *and* Saturn.

THE Dreams of the Marchioness were not very successful; they still represented to her the same Objects we are acquainted with here on Earth. We were therefore forced to conclude ourselves ignorant what sort of Inhabitants all these Planets had, and content ourselves only to guess at them, and continue the Voyage we had begun thro' these several Worlds. We were come to *Venus*, and I told her, that *Venus* certainly turn'd on itself, tho' nobody could tell in what time; and consequently were ignorant how long her Day lasted; but her Year was compos'd of 8 Months, because it is in that time she turns round the Sun. And seeing *Venus* is 40 times less than the

the Earth, the Earth appears to them in *Venus* to be a Planet, 40 times bigger than *Venus* appears to us on the Earth: and as the Moon is 40 times leſſer than the Earth, ſo ſhe ſeems to be juſt of the ſame Magnitude, to the Inhabitants of *Venus*, as *Venus* ſeems here to us.

I ſee then, *ſays the Marchioneſs*, that the Earth is not to *Venus*, what *Venus* is to the Earth: I mean, that the Earth is too big to be the Mother of Love, or the Shepherd's Star to *Venus*; but the Moon which appears to *Venus* of the ſame Bigneſs as *Venus* appears to us, is aſſign'd to be the Mother of Love, and Shepherd's Star to *Venus*; for ſuch Names are only proper for a little briſk airy Planet, bright and ſhining as the Goddeſs herſelf. Oh bleſſed Moon, how happy art thou to preſide over the Amours of thoſe gallant Inhabitants of *Venus*, where all they ſay is ſoft and moving, and perfectly refined!

O without Doubt, *ſays I*, the very common People of *Venus* are all *Celadons* and *Silvanders*, and their moſt trivial Diſcourſes

courſes are infinitely finer than any in *Clelia:* their very Climate inſpires Love; *Venus* is much nearer than the Earth to the Sun, from whence ſhe receives a more vigorous and active Influence.

I find, *ſays the Marchioneſs*, it is eaſy enough to gueſs at the Inhabitants of *Venus*; they reſemble what I have read of the *Moors* of *Granada*, who were a little black People, ſcorched with the Sun, witty, full of Fire, very amorous, much inclin'd to Muſick and Poetry, and ever inventing Maſques and Tournaments in honour of their Miſtreſſes. Pardon me, Madam, *ſaid I*; you are little acquainted with the Planet. *Granada*, in all its Glory, was a perfect *Greenland* to it; and your gallant *Moors*, in compariſon with that People, were as ſtupid as ſo many *Laplanders*.

But what do you think then of the Inhabitants of *Mercury?* They are yet nearer to the Sun, and are ſo full of Fire, that they are abſolutely mad; I fancy they have no Memory at all, like moſt of the Negroes, that they make no Reflections; and what they do is by ſudden

ſudden ſtarts, and perfect hap-hazard. In ſhort, *Mercury* is the Bedlam of the Univerſe: the Sun appears to them much greater than it does to us, becauſe they are much nearer to it than we: it ſends them ſo vaſt and ſtrong a Light, that the moſt glorious Day here would be no more with them than a declining Twilight. I know not if they can diſtinguiſh Objects; but the Heat to which they are accuſtomed, is ſo exceſſive, that they would be ſtarv'd with Cold in the torrid Zone. Their Year is but three Months; but we know not the exact length of their Day, becauſe *Mercury* is ſo little, and ſo near the Sun: it is (as it were) loſt in his Rays, and is very hardly diſcover'd by the Aſtronomers; ſo that they cannot obſerve how it moves on its Center; but becauſe it is ſo little, fancy it compleats its Motion in a little time: ſo that by conſequence the Day there is very ſhort, and the Sun appears to them like a vaſt fiery Furnace at a little diſtance, whoſe Motion is prodigiouſly ſwift and rapid, which is ſo much the better for them, as it is evi-

dent they muſt long for Night; and during their Night, *Venus* and the Earth (which muſt appear conſiderably big) gives Light to them. As for the other Planets which are beyond the Earth, towards the Firmament, they appear leſs to them in *Mercury*, than they do to us here, and they receive but little Light from them, perhaps none at all: the fixed Stars likewiſe ſeem leſs to them, and ſome of 'em totally diſappear, which, were I there, I ſhould eſteem a very great loſs. I ſhould be very uneaſy to ſee this large Convex ſtudded with but few Stars, and thoſe too of the leaſt Magnitude and Luſtre.

What ſignifies the loſs of a few fixed Stars, *ſays the Lady?* I pity them for the exceſſive Heat they endure: let us give them ſome Relief, and ſend *Mercury* a few of the refreſhing Showers they have ſometimes four Months together in the hotteſt Countries, during their greateſt extremity. Your Fancy is good, Madam, *reply'd I*; but we will relieve 'em another way. In *China* there are Countries which are extremely hot by their Situation

Situation; yet in *July* and *Auguſt* are ſo cold, that the Rivers are frozen: the Reaſon is, they are full of Salt-Petre, which being exhal'd in great abundance by the exceſſive heat of the Sun, makes a perfect Winter at Midſummer. We will fill the little Planet with Salt-Petre, and let the Sun ſhine as hot as he pleaſes. And yet after all, who knows but the Inhabitants of *Mercury* may have no occaſion either for Rain or Salt-Petre? If it is a certain Truth, that Nature never gives life to any Creature, but where that Creature may live; then, thro' Cuſtom and Ignorance of a better Life, thoſe People may live happily.

After *Mercury* comes the Sun; but there is no poſſibility of peopling it, nor no room left for a Wherefore. By the Earth which is inhabited, we judge that other Bodies of the ſame nature may be likewiſe inhabited: But the Sun is a Body not like the Earth, or any of the Planents; the Sun is the Source or Fountain of Light; which, tho' it is ſent from one Planet to another, and receives ſeveral

Alterations by the way, yet all originally proceeds from the Sun: he draws from himself that precious Substance which he emits from all sides, and which reflects when it meets with a solid Body, and spreads from one Planet to another those long and vast Trains of Light which cross, strike thro', and intermingle in a thousand different Fashions, and make (if I may so say) the richest Tissues in the World. The Sun likewise is placed in the Center, from whence, with most Convenience, he may equally distribute, and animate by his Heat. It is then a particular Body, but what sort of Body, has often puzzled better Heads than mine. It was thought formerly a Body of pure Fire; and that Opinion passed current till the beginning of this Age: when they perceiv'd several Spots on its Surface. A little after they had discover'd new Planets, (of which hereafter) which some say were those Spots; for those Planets moving round the Sun, when they turn'd their dark half to us, must necessarily hide part of it: and had not the Learned, with these pretended

Planets,

Planets, made their court before to moſt of the Princes in *Europe*, giving the Name of this Prince to one, and of that Prince to another Planet, I believe they would have quarrell'd who ſhould be Maſter of theſe Spots, that they might have nam'd them as they pleas'd.

'Twas but t'other day, *ſays the Lady*, you were deſcribing the Moon, and call'd ſeveral Places by the Names of the moſt famous Aſtronomers. I was pleas'd with the Fancy: For ſince the Princes have ſeiz'd on the Earth, 'tis fit the Philoſophers (who are as proud as the beſt of 'em) ſhould reſerve the Heavens for themſelves without any Competitors. Oh! trouble not your ſelf, *ſaid I*, the Philoſophers make the beſt advantage of their Territories; and if they part with the leaſt Star, 'tis on very good Terms: But the Spots on the Sun are fallen to nothing. 'Tis now diſcover'd that they are not Planets, but Clouds, Streams, or Droſs, which riſe upon the Sun, ſometimes in a great quantity, ſometimes in a leſs; ſometimes they are dark, ſometimes clear;

ſometimes they continue a great while, and ſometimes they diſappear as long. It ſeems the Sun is a liquid Matter; ſome think, of melted Gold, which boils over as it were continually, and by the Force of its Motion calls the Scum or Droſs on its Surface, where it is conſum'd, and others ariſe. Imagine then what ſtrange Bodies theſe are, when ſome of them are as big as the Earth. What a vaſt quantity muſt there be of this melted Gold! and what muſt be the Extent of this great Sea of Light and Fire which they call the Sun? Others ſay, the Sun appears thro' their Teleſcopes full of Mountains, which vomit Fire continually, and are joined together like Millions of *Etna's*. Yet there are thoſe that ſay, theſe burning Mountains are pure Viſion, caus'd by a fault in the Spectacles; but what ſhall we truſt, if we muſt diſtruſt our Teleſcopes, to which we owe the knowledge of ſo many new Objects? But let the Sun be what it will, it cannot be at all proper for Habitation; and what pity that is! for how pleaſant would it be!

You

You might then be at the Center of the Univerſe, where you would ſee all the Planets turn regularly about you; but now we know nothing but extravagant Fancies, becauſe we do not ſtand in the proper Place. There is but one place in the World, where the Study or Knowledge of the Stars is eaſily obtain'd, and what pity 'tis there is no body there! You forget your ſelf, ſure, *ſays ſhe*; were you in the Sun you would ſee nothing, neither Planets nor fixed Stars: doth not the Sun efface all? So that could there be any Inhabitants there, they might juſtly think themſelves the only People in Nature.

I own, *ſaid I*, my Miſtake: I was thinking of the Situation of the Sun, and not of the Effect of its Light: I thank you for your Correction; but muſt take the Boldneſs to tell you, that you are in an Error as well as my ſelf: for were there Inhabitants in the Sun, they would not ſee at all; either they could not bear the Strength of its Light, or for want of a due diſtance, they could not receive it; ſo that things

well consider'd, all the People there must be stark blind, which is another reason why the Sun cannot be inhabited. But let us pursue our Voyage. We are now arriv'd at the Center, which is always the Bottom or lowest Place of what is round: if we go on, we must ascend: we shall find *Mercury*, *Venus*, the Earth, the Moon, all the Planets we have already visited; the next is *Mars*, who affords nothing curious that I know of; his Day is not quite an hour longer than ours, but his Year is twice as long: He is a little less than the Earth; and the Sun seems not altogether so large and so bright to him, as it appears to us. But let us leave *Mars*, he is not worth our stay. But what a pretty thing is *Jupiter*, with his four Moons, or Yeomen of the Guard! they are four little Planets that turn round him, as our Moon turns round us. But why, *says she*, interrupting me, must there be Planets to turn round other Planets, that are no better than themselves? I should think it would be more regular and uniform, that all the Planets, little and great,

without

without any distinction, should have one and the same Motion round the Sun.

Ah, Madam, *said I*, if you knew what were *Descartes*'s Whirlpools or Vortexes (whose Name is terrible, but their Idea pleasant) you would not talk as you do. Must my Head (*says she*, *smiling*) turn round to comprehend 'em, or must I become a perfect Fool to understand the Mysteries of Philosophy? Well, let the World say what it will, go on with your Whirlpools. I will, *said I*; and you shall see the Whirlpools are worthy of these Transports. That then which we call a Whirlpool or Vortex, is a Mass of Matter, whose Parts are separated or detach'd one from another, yet have all one uniform Motion; and at the same time every one is allow'd, or has a particular Motion of its own, provided it follows the general Motion. Thus a Vortex of Wind, or Whirlwind, is an Infinity of little Particles of Air, which turn round all together, and involve whatever they meet with. You know the Planets are borne up by the Celestial Matter, which is very subtile and active;

ſo that this great Maſs, or Ocean of Celeſtial Matter, which flows as far as from the Sun to the fixed Stars, turns round, and bears the Planets along with it, making them all turn after the ſame manner round the Sun, who poſſeſſes the Center, but in a longer or a ſhorter time, according as they are farther or nearer in diſtance to it. There is not any Planet next the Sun, which does not turn, but he turns on himſelf, becauſe he is juſt in the middle of this Celeſtial Matter: And you muſt know by the way, that were the Earth in his place, it muſt turn on it ſelf, as the Sun does. This is the great Vortex, of which the Sun is Lord; yet at the ſame time, the Planets make little particular Vortexes, in imitation of that of the Sun; each of them in turning round the Sun, does at the ſame time turn round itſelf, and makes a certain Quantity of Celeſtial Matter turn round it likewiſe, which is always prepar'd to follow the Motion the Planet gives it, provided it is not diverted from its general Motion: this then is the particular Vortex of the Planet,

Planet, which puſhes it as far as the Strength of its Motion reaches; and if by chance a leſſer Planet falls into the Vortex of a greater Planet, it is immediately borne away by the greater, and is indiſpenſably forc'd to turn round it, tho' at the ſame the great Planet, the little Planet, and the Vortex which encloſes 'em, all turn round the Sun. 'Twas thus at the beginning of the World, when we made the Moon follow us, becauſe ſhe was within the reach of our Vortex, and therefore wholly at our diſpoſal. *Jupiter* was ſtronger, or more fortunate than we; he had four little Planets in his Neighbourhood, and he brought 'em all four under his Subjection; and no doubt we, tho' a principal Planet, had met the ſame Fate, had we been within the Sphere of his Activity: he is ninety times bigger than the Earth, and would certainly have ſwallow'd us into his Vortex; we had then been no more than a Moon in his Family, when now we have one to wait on us: ſo that, you ſee, the advantage of Situation decides often all our good Fortune. But

But pray, *says she*, who can assure us we shall still continue as we do now? If we should be such Fools as to go near *Jupiter*, or he so ambitious as to approach us, what will become of us? For if (as you say) the Celestial Matter is continually under this great Motion, it must needs agitate the Planets irregularly; sometimes drive 'em together, and sometimes separate 'em. Luck is all, *said I*; we may win as well as lose; and who knows but we might bring *Mercury* and *Venus* under our Government? they are little Planets, and cannot resist us. But in this Particular, Madam, we need neither hope nor fear; the Planets keep within their own Bounds, and are oblig'd (as formerly the Kings of *China* were) not to undertake new Conquests. Have you not seen when you put Water and Oil together, the Oil swims a-top? and if to these two Liquors, you add a very light Liquor, the Oil bears it up, and it will not sink to the Water; but put an heavier Liquor, of a just weight, and it will pass through the Oil, which is too weak to sustain it,

and

and ſink till it comes to the Water, which is ſtrong enough to bear it up: So that in this Liquid compos'd of two Liquors, which do not mingle, two Bodies of an unequal weight will naturally aſſume two different places; the one will never aſcend, the other will never deſcend. If we put ſtill other Liquors which do not mingle, and throw other Bodies on them, it will be the ſame Thing. Fancy then that the Celeſtial Matter, which fills this great Vortex, has ſeveral reſting-places one by another, whoſe weight are different, like that of Oil, Water, and other Liquors; the Planets too are of a different weight, and conſequently every Planet ſettles in that place which has a juſt ſtrength to ſuſtain and keep it equilibrate: ſo you ſee 'tis impoſſible it ſhould ever go beyond.

I very well apprehend, *ſays ſhe*, that theſe Weights keep their ſtations regularly. Would to God our World were as well regulated, and every one among us knew their proper place. I am now in no fear of being over-run by *Jupiter*; and

and ſince he lets us alone in our Vortex with our Moon, I do not envy him the four which he has. Did you envy him, *I reply'd*, you would do him wrong, for he has no more than what he has occaſion for; at the diſtance he is from the Sun, his Moons receive and ſend him but a very weak Light. It is true, that as he turns upon himſelf in 10 Hours, his Nights, by conſequence, are but 5 Hours long; ſo one would think there is no great occaſion for 4 Moons. But there are other things to be conſidered: Here under the Poles they have 6 Months Day, and 6 Months Night, becauſe the Poles are the two Extremities of the Earth, the fartheſt remov'd from thoſe Places where the Sun is over 'em in a perpendicular Line. The Moon ſeems to keep almoſt the ſame courſe as the Sun; and if the Inhabitants of the Pole ſee the Sun during one half of his courſe of a Year, and during the other half do not ſee him at all; they ſee the Moon likewiſe during one half of her courſe of a Month; that is, ſhe appears to 'em 15 Days, but they do not ſee her during the other

other half. *Jupiter*'s Year is as much as 12 of ours; so that there must be two opposite Extremities in that Planet, where their Night and their Day are 6 Years each. A Night 6 Years long is a little disconsolate, and 'tis for that reason, I suppose, they have 4 Moons; that which (in regard to *Jupiter*) is uppermost, finisheth its course about him in 17 Days, the second in 7, the third in 3 days and an half, and the fourth in 42 Hours: and tho' they are so unfortunate as to have 6 years Night, yet their course being exactly divided into halves, they never pass above 21 Hours, wherein they do not see at least the last Moon, which is a great Comfort in so tedious a Darkness: so that be where you will, these 4 Moons are sometimes the prettiest sight imaginable; sometimes they rise all 4 together, and then separate according to the Inequality of their course; sometimes they are all in their Meridian, rang'd one above another; sometimes you see 'em at equal Distances on the Horizon; sometimes when two rise, the other two go down. Oh! how I should love to see this

this pleasant Sport of Eclipses! for there is not a Day passes, but they eclipse the Sun, or one another; and they are so accustomed to these Eclipses in that Planet, that they are certainly more of Diversion than of Fear.

Well, *says the Marchioness*, I hope you will people these four Moons, tho' you say they are but little secondary Planets, appointed to give Light to another Planet during its Night. Do not doubt it, *I reply'd*; these Planets are not a Jot the worse to be inhabited, for being forc'd to turn round another Planet of greater Consequence. I would have then, *says she*, the People of these four Moons, to be so many Colonies under *Jupiter*'s Government; they should, if it were possible, receive their Laws and Customs from him, and consequently pay him a kind of Homage, and not view his great Planet without paying a Deference. Would it not be convenient too, *said I*, that they should send Deputies with Addresses to him? for he has certainly a more absolute Command over his Moon, than we have over ours; tho' his Power,

after

after all, is but imaginary, and consists chiefly in making them afraid: for that Moon which is nearest to him, sees that he is 360 times bigger than our Moon appears to us; for in truth, he is so much bigger than she: he is also much nearer to them, than our Moon is to us, the which makes him appear the greater, so that this formidable Planet hangs continually over their Heads at a very little Distance. And if the *Gauls* were afraid heretofore that the Heavens would fall on 'em, I think the Inhabitants of that Moon may well be apprehensive that *Jupiter* will at some time or other overwhelm them. I fancy, *says she*, they are possessed with that Fear, because they are not concerned at Eclipses. Every one has their particular Folly: we are afraid of an Eclipse, and they, that *Jupiter* will fall on their Heads. It is very true, *said I*; the Inventer of the third System, I told you t'other Night, the famous *Tycho Brahe*, one of the greatest Astronomers that ever was, did not apprehend the least Danger from an Eclipse, when every body else was under

under the greateſt Conſternation; yet this great Man had as an unaccountable a Fear, did a Hare croſs him, or if the firſt Perſon he met in a Morning was an old Woman, home preſently went *Tycho Brahe*, he ſhut himſelf up for that Day, and would not meddle with the leaſt Buſineſs.

It would be very unreaſonable, *reply'd ſhe*, when ſuch a Man could not redeem himſelf from the Fear of Eclipſes, without falling into ſome other Whimſy as troubleſome, that the Inhabitants of that Moon of *Jupiter*, of which we are talking, ſhould come off upon eaſier Terms. But we will give them no Quarter, they ſhall come under the general Rule, and if they are free from one Error, ſhall fall into another to put them upon an Equivalent. But as I do not trouble myſelf, becauſe I cannot gueſs what the next Error may be, pray clear up one more Difficulty to me, which has given me Pain for ſome Minutes. Tell me, if the Earth be ſo little in compariſon of *Jupiter*, whether his Inhabitants do diſcover

cover us? Indeed, *said I*, I believe not; for if we appear to him ninety times leſs than he appears to us, judge you if there be any Poſſibility: yet this we may reaſonably conjecture, that there are Aſtronomers in *Jupiter*, who after they have made the moſt curious Teleſcopes, and taken the cleareſt Night for their Obſervations, they may have diſcover'd a little Planet in the Heavens, which they never ſaw before. If they publiſh their Diſcovery, moſt People know not what they mean, or laugh at them for Fools: nay, the Philoſophers themſelves will not believe 'em, for fear of deſtroying their own Opinions; yet ſome few may be a little curious; they continue their Obſervations, diſcover the little Planet again, and are now aſſur'd it is no Viſion; then they conclude it has a Motion round the Sun, which it compleats in a Year: and at laſt (thanks to the Learned) they know in *Jupiter* our Earth is a World, every body runs to ſee it at the end of the Teleſcope, tho' 'tis ſo little, 'tis hardly to be diſcern'd.

It

It must be pleasant, *says she*, to see the Astronomers of both Planets levelling their Tubes at one another, like two Files of Musqueteers, and mutually asking, what World that is? What People inhabit it? Not so fast neither, *I reply'd*; for tho' they may from *Jupiter* discover our Earth, yet they may not know us; that is, they may not have the least Suspicion it is inhabited: and should any one there chance to have such a Fancy, he might be sufficiently ridicul'd, if not prosecuted for it. For my part, I believe they have Work enough to make Discoveries on their own Planet, not to trouble their Heads with ours: And had Sir *Francis Drake* and *Columbus* been in *Jupiter*, they might have had good Employments: why, I warrant you they have not yet discover'd the hundredth part of their Planet. But if *Mercury* is so little, they are all as it were near Neighbours; and 'tis but taking a Walk, to go round that Planet. But if we do not appear to 'em in *Jupiter*, they cannot certainly discover *Venus* and *Mercury*, which are much less than the Earth,

Earth, and at a greater diſtance; but in lieu of it, they ſee *Mars*, their own four Moons, and *Saturn* with his: This, I think, is work enough for their Aſtronomers; and Nature has been ſo kind to conceal from them the reſt of the Univerſe. Do you think it a Favour then, *ſays ſhe?* Yes, certainly, *ſaid I*; for there are ſixteen Planets in this great Vortex. Nature ſaves us the trouble of ſtudying the Motions of them all, and ſhews us but ſeven, which, I think, is very obliging, tho' we know not how to value the Kindneſs; for we have recover'd the other nine which were hid from us, and ſo render the Science of Aſtronomy much more difficult than Nature deſign'd it.

If there are ſixteen Planets, *ſaid ſhe*, *Saturn* muſt have five Moons. 'Tis very true, *ſaid I*; and two of theſe five are but lately diſcover'd: but there is ſomewhat that is more remarkable; ſince his Year makes thirty of ours, there are conſequently in him ſome Countries, where their Night is fifteen Years long; and what can you imagine Nature has invented

vented to give Light, during so dreadful a Night? Why, she has not only given *Saturn* five Moons, but she has encompass'd him round with a great Circle or Ring, which being plac'd beyond the reach of the Shadow which the Body of that Planet casts, reflects the Light of the Sun continually on those Places where they cannot see the Sun at all.

I protest, *says the Marchioness*, this is very surprizing; and yet all is contriv'd in such great Order, that it is impossible not to think but nature took time to consider the Necessities of all animate Beings, and that the disposing of these Moons was not a work of Chance; for they are only divided among those Planets which are fartherst distant from the Sun, the Earth, *Jupiter* and *Saturn*. Indeed it was not worth while to give any to *Mercury* or *Venus*; they have too much Light already; and they account their Nights (as short as they are) a greater Blessing than their Days. But pray, why has not *Mars* a Moon too? It seems he has none, tho' he is much farther than the Earth from the Sun. It is very true,

said

ſaid I; no doubt but he has other helps tho' we don't know 'em: You have ſeen the *Phoſphorus*, both liquid and dry, how it receives and imbibes the Rays of the Sun, and what a great Light it will caſt in a dark Place. Perhaps *Mars* has many great high Rocks, which are ſo many natural *Phoſphorus*'s, which in the Day take in a certain Proviſion of Light, and return it again at Night. What think you, Madam, is it not very pleaſant, when the Sun is down, to ſee thoſe lighted Rocks, like ſo many Illuminations at a Birth-day Night? Beſides, there is a kind of Bird in *America* that yields ſuch a Light, you may read by it in the darkeſt Night: and who knows but *Mars* may have great Flocks of theſe Birds, that as ſoon as it is Night, diſperſe themſelves into all Parts, and ſpread from their Wings another Day?

I am not at all contented, *ſays ſhe*, with your Rocks or your Birds: 'tis a pretty fancy indeed; but 'tis a ſign that there ſhould be Moons in *Mars*, ſince Nature has given ſo many to *Saturn* and *Jupiter*: and if all the other Worlds that are

are distant from the Sun have Moons, why should *Mars* only be excepted? Ah, Madam, *said I*, when you are a little more dipt in Philosophy, you will find Exceptions in the very best Systems. There are always some things that agree extremely well; but then there are others that do not accord at all: those you must leave as you found 'em, if ever you intend to make an end. We will do so by *Mars*, if you please, and say no more of him, but return to *Saturn*. What do you think of this great Ring in the Form of a Semicircle, that reaches from one end of the Horizon to the other, which reflecting the Light of the Sun, performs the Office of a continual Moon? And must not we inhabit this Ring too, *says she smiling?* I confess, *said I*, in the Humour I am in, I could almost send Colonies every where; and yet I can't well plant any there, it seems so irregular a Habitation: but for the five little Moons, they cannot chuse but be inhabited; tho' some think this Ring is a Circle of Moons, which follows close to one another, and have an equal Motion, and that the five

little

little Moons fell out of this Circle: how many Worlds are there then in the Vortex of *Saturn?* But let it be how it will, the People in *Saturn* live very miſerably. 'Tis true, this Ring gives Light to 'em, but it muſt be a very poor one, when the Sun ſeems to 'em but a little pale Star, whoſe Light and Heat cannot but be very weak at ſo great a Diſtance: they ſay, *Greenland* is a perfect Bagnio in compariſon of that Planet, and that they would expire with Heat in our coldeſt Countries.

You give me, *ſays ſhe*, ſuch an Idea of *Saturn*, that makes me ſhake with Cold, and that of *Mercury* puts me into a Fever. It cannot be otherwiſe, *I reply'd*; for the two Worlds, which are the Extremities of this great Vortex, muſt be oppoſite in all things. They muſt then, *ſays ſhe*, be very wiſe in *Saturn*; for you told me they were all Fools in *Mercury*. If they are not wiſe, *ſaid I*, yet they have all the Appearances of being very phlegmatick. They are People that know

not what it is to laugh; they take a Day's time to anſwer the leaſt Queſtion you can aſk them; and are ſo very grave, that were *Cato* living among them, they would think him a *Merry-Andrew*.

It is odd to conſider, *ſays ſhe*, that the Inhabitants of *Mercury* are all Life, and the Inhabitants of *Saturn* quite contrary; but among us, ſome are briſk, and ſome are dull: It is, I ſuppoſe, becauſe our Earth is plac'd in the Middle of the other Worlds, and ſo we participate of both Extremes; there is no fix'd or determin'd Character; ſome are made like the Inhabitants of *Mercury*, ſome like thoſe of *Saturn*; we are a Mixture of the ſeveral Kinds that are found in the reſt of the Planets. Why, *ſaid I*, do you not approve of the Idea? Methinks it is pleaſant to be compos'd of ſuch a fantaſtical Aſſembly, that one would think we were collected out of different Worlds. We need not travel abroad, when we ſee the other Worlds in Epitome at home.

I am

I am ſure, *ſays the Marchioneſs*, we have one great Convenience in the Situation of our World; it is not ſo hot as *Mercury* or *Venus*, nor ſo cold as *Jupiter* or *Saturn:* and our Country is ſo temperately plac'd, that we have no Exceſs either of Heat or Cold. I have heard of a Philoſopher, who gave Thanks to Nature, that he was born a Man, and not a Beaſt; a *Greek*, and not a *Barbarian:* and for my part, I render Thanks, that I am ſeated in the mildeſt Planet of the Univerſe, and in one of the moſt temperate Regions of that Planet. You have more reaſon, *ſaid I*, to give Thanks that you are young, and not old; that you are young and handſome, and not young and ugly; that you are young, handſome, and a *French* Woman, and not young, handſome, and an *Italian:* theſe are more proper Subjects for your Thanks, than the Situation of your Vortex, or the Temperature of your Country.

Pray, Sir, *ſays ſhe*, let me give Thanks for all things, to the very Vortex in which I am planted. Our Pro-

portion of Happineſs is ſo very ſmall, that we ſhould not loſe any, but improve continually what we have, and be grateful for every thing, tho' ever ſo common or inconſiderable. If nothing but exquiſite Pleaſure will ſerve us, we muſt wait a long time, and be ſure to pay too dear for it at laſt. I wiſh, *ſaid I*, that Philoſophy was the Pleaſure you propoſe, that when you think of Vortexes, you would not forget an humble Servant of your Ladyſhip's. I eſteem it a Pleaſure, *ſays ſhe*, while it diverts innocently, but no longer. I will engage for it till To-morrow, *I reply'd*; for the fixed Stars are beyond what you have yet ſeen.

The

The Fifth Evening.

Shewing, that the fixed Stars are so many Suns, every one of which gives Light to a World.

THE Marchioness was very impatient to know what would become of the fixed Stars: Are they peopled, *says she*, as the Planets are? Or are they not inhabited at all? Or in short, what shall we do with 'em? You may soon guess, *said I*; the fixed Stars can't be less distant from the Earth than fifty millions of Leagues; nay, if you anger an Astronomer, he will set 'em farther. The Distance from the Sun to the farthest Planet is nothing, in comparison of the Distance from the Sun or from the Earth to the fixed Stars; it is almost beyond Arithmetick. You see their Light is bright and shin-

ing; and did they receive it from the Sun, it muſt needs be very weak after a Paſſage of fifty Millions of Leagues: then judge how much it is waſted by Reflection; for it comes back again as far to us: ſo that forwards and backwards, here are an hundred Millions of Leagues for it to paſs; and it is impoſſible it ſhould be ſo clear and ſtrong as the Light of a fixed Star, which cannot but proceed from itſelf: ſo that, in a Word, all the fixed Stars are luminous Bodies in themſelves, and ſo many Suns.

I perceive, *ſays the Marchioneſs*, where you would carry me: you are going to tell me, that if the fixed Stars are ſo many Suns, and our Sun the Center of a Vortex that turns round him; why may not every fixed Star be the Center of a Vortex, that turns round the fixed Star? Our Sun enlightens the Planets: why may not every fixed Star have Planets to which they give Light? You have ſaid it, *I reply'd*, and I ſhall not contradict you.

You

You have made the Univerſe ſo large, *ſaid ſhe*, that I know not where I am, or what will become of me: What, is it all to be divided into Vortexes confuſedly one among another? Is every Star the Center of a Vortex, as big as ours? Is that vaſt Space which comprehends our Sun and Planets but an inconſiderable part of the Univerſe? And are there as many ſuch Spaces, as there are fixed Stars? I proteſt it is dreadful, the very Idea of it confounds and overwhelms me. Dreadful! Madam, *ſaid I*; I think it very pleaſant: When the Heavens were a little blue Arch, ſtuck with Stars, methought the Univerſe was too ſtrait and cloſe; I was almoſt ſtifled for want of Air: but now it is enlarg'd in Height and Breadth, and a thouſand and a thouſand Vortexes taken in, I begin to breathe with more freedom, and think the Univerſe to be incomparably more magnificent than it was before. Nature has ſpar'd no Coſt, even to Profuſeneſs; and nothing can be ſo glorious, as to ſee ſuch a prodigious Number of Vortexes, whoſe ſeveral Centers are poſſeſs'd by a par-

ticular Sun, which makes the very Planets turn round it. The Inhabitants of a Planet of one of these innumerable Vortexes, behold on all Sides these luminous Centers of the Vortex, with which they are encompass'd: but perhaps they do not see the Planets, who receiving but a faint Light from their Sun, cannot send it beyond their own World.

You present me with a Prospect of so vast a length, that no Eye can reach to the end of it. I plainly see the Inhabitants of the Earth, and you have made me discover those that dwell in the Moon, and in other Planets of our Vortex; now these indeed I conceive pretty plainly, but do not see so clearly as those of the Earth: after these, we come to the Inhabitants of the Planets which are in the other Vortexes, but they are sunk into so great a depth, that tho' I do all I can to see them, yet I must confess I can hardly perceive 'em. By the Expression you use in speaking of 'em, they seem to be almost annihilated; you ought then to call 'em the Inhabitants of one of those innumerable Vortexes:

We

We ourſelves, for whom the ſame Expreſſion ſerves, muſt confeſs, that we ſcarce know where we are, in the midſt of ſo many Worlds; for my own part, I begin to ſee the Earth ſo fearfully little, that I believe from henceforward I ſhall never be concern'd at all for any thing. That we ſo eagerly deſire to make ourſelves great, that we are always deſigning, always troubling and haraſſing ourſelves, is certainly becauſe we are ignorant what theſe Vortexes are: but now I hope my new Lights will in part juſtify my Lazineſs; and when any one reproaches me with my Careleſſneſs, I will anſwer, *Ah, did you but know what the fixed Stars are!* ---- It was not fit, *ſaid I*, that *Alexander* ſhould know what they were; for a certain Author *, who maintains that the Moon is inhabited, very gravely tells us, that *Ariſtotle* (from whom no Truth could be long conceal'd) muſt neceſſarily be of an Opinion back'd with ſo much Reaſon; but yet he never durſt acquaint *Alexander* with the Secret, fearing he might run mad with Deſpair, when he

* Huygens.

knew there was another World which he could not conquer. With much more reason then was this Mystery of Vortexes and fix'd Stars kept secret in *Alexander*'s time: for tho' they had been known in those days, yet a Man would have been a great Fool to have said any thing of 'em to *Alexander*; it would have been but an ill way of making his court to that ambitious Prince: for my part, I that know 'em, am not a little troubled to find myself not one jot the wiser for all the knowledge I have of 'em; the most they can do, according to your way of reasoning, is but to cure People of their Ambition, and their unquiet restless Humour, which are Diseases I am not at all troubled with: I confess, I am guilty of so much Weakness, as to be in love with what is beautiful; that's my Distemper, and I am confident the Vortexes can never cure it. What if the other Worlds render ours so very little? they cannot spoil fine Eyes, or a pretty Mouth; their Value is still the same, in spite of all the Worlds that can possibly exist.

This

This Love, *reply'd the Marchioneſs ſmiling*, is a ſtrange thing; let the World go how 'twill, 'tis never in danger; there is no Syſtem can do it any harm. But tell me freely, is your Syſtem true? Pray conceal nothing from me; I will keep your Secret very faithfully; it ſeems to have for its Foundation, but a ſlight Probability: which is, that if a fix'd Star be in itſelf a luminous Body, like the Sun, then by conſequence it muſt, as the Sun is, be the Center and Soul of a World, and have its Planets turning round about it. But is there an abſolute Neceſſity it muſt be ſo? Madam, *ſaid I*, ſince we are in the Humour of mingling amorous Follies with our moſt ſerious Diſcourſe, I muſt tell you, that in Love and the Mathematicks, People reaſon much alike. Allow ever ſo little to a Lover, yet preſently you muſt grant him more, nay more and more, which will at laſt go a great way. In like manner, grant but a Mathematician one little Principle, he immediately draws a Conſequence from it, to which you muſt neceſſarily aſſent; and from this Conſequence

quence another, till he leads you so far (whether you will or no) that you have much ado to believe him. These two sorts of People, Lovers and Mathematicians, will always take more than you give 'em. You grant, that when two things are like one another in all visible Respects, it is possible they may be like one another in those things that are not visible, if you have not some good Reason to believe otherwise. Now this way of arguing have I made use of. The Moon, *says I*, is inhabited, because she is like the Earth; and the other Planets are inhabited, because they are like the Moon: I find the fix'd Stars to be like our Sun, therefore I attribute to them what is proper to him. You are now gone too far to be able to retreat, therefore you must go forward with a good Grace. But, *says the Marchioness*, if you build upon this Resemblance or Likeness which is between our Sun and the fix'd Stars, then, to the People of another great Vortex, our Sun must appear no bigger than a small fix'd Star, and can be seen only when 'tis Night with them.

Without

Without doubt, Madam, *said I*, it must be so: Our Sun is much nearer to us, than the Suns of other Vortexes, and therefore its Light makes a much greater Impression on our Eyes, than theirs do. We see nothing but the Light of our own Sun; and when we see that, it darkens and hinders us from seeing any other Light: But in another great Vortex, there is another Sun, which rules and governs, and in its turn extinguishes the Light of our Sun, which is never seen there but in the Night, with the rest of the other Suns, that is, the fix'd Stars: with them, our Sun is fastned to the great arched Roof of Heaven, where it makes a part of some Bear or Bull; for the Planets which turn round about it, (our Earth for example) as they are not seen at so vast a distance, so no body does so much as dream of 'em. All the Suns then are Day-Suns in their own Vortexes, but Night-Suns in other Vortexes. In his own World or Sphere every Sun is single, and there is but one to be seen; but every where else, they serve only to make a number. May

not

not the Worlds, *reply'd the Marchioness*, notwithstanding this great Resemblance between 'em, differ in a thousand other things? For tho' they may be alike in one Particular, they may differ infinitely in others.

It is certainly true, *said I*; but the Difficulty is to know wherein they differ. One Vortex hath many Planets, that turn round about its Sun; another Vortex has but a few. In one Vortex there are inferior or less Planets, which turn about those that are greater; in another, perhaps, there are no inferior Planets: here, all the Planets are got round about their Sun, in Form of a little Squadron; beyond which is a great void Space, which reacheth to the neighbouring Vortexes: in another Place, the Planets take their Course towards the Outside of their Vortex, and leave the Middle void. There may be Vortexes also quite void, without any Planets at all; others may have their Sun not exactly in their Center, and that Sun may so move, as to carry its Planets along with it; others may have

Planets,

Planets, which in regard of their Sun, aſcend and deſcend, according to the change of their Equilibration, which keeps them ſuſpended. In ſhort, what Variety can you wiſh for? But I think I have ſaid enough for a Man that was never out of his own Vortex.

It is not ſo much, *reply'd the Marchioneſs*, conſidering what a multitude of Worlds there are: what you have ſaid is ſufficient but for 5 or 6, and from hence I ſee thouſands.

What would you ſay, Madam, if I ſhould tell you, there are many more fix'd Stars than thoſe you ſee? And that an infinite Number are diſcovered with Glaſſes, which cannot be ſeen by the naked Eye? One ſingle Conſtellation, where perhaps we count only 12 or 15, there are as many more to be found as uſually appear in the whole Hemiſphere.

I ſubmit, *ſays ſhe*, and beg your Pardon; you quite confound me with Worlds and Vortexes. I have more to tell you, Madam, *ſaid I:* You ſee that Whiteneſs in the Sky, which ſome call the

the *Milky-way*; can you imagine what that is? 'Tis nothing but an Infinity of ſmall Stars, not to be ſeen by our Eyes, becauſe they are ſo very little; and they are ſown ſo thick one by another, that they ſeem to be one continued Whiteneſs. I wiſh you had a Glaſs to ſee this Ant-hill of Stars, and this Cluſter of Worlds, if I may ſo call 'em: they are in ſome ſort, like the *Maldivian* Iſlands. Thoſe twelve thouſand Banks of Sand, ſeparated by narrow Channels of the Sea, which a Man may leap as eaſily as over a Ditch; ſo near together are the Vortexes of the Milky-way, that the People in one World may talk and ſhake Hands with thoſe of another; at leaſt, I believe the Birds of one World may eaſily fly into another; and that Pigeons may be train'd up to carry Letters, as they do in the *Levant*. Theſe little Worlds are excepted out of that general Rule, by which one Sun in his own Vortex, as ſoon as he appears, effaces the Light of all other foreign Suns. If you were in one of theſe little Vortexes of the Milky-way,

Milky-way, your Sun would not be much nearer to you, and conſequently would not make any much greater ſenſible Impreſſion on your Eyes, than 100,000 other Suns of the neighbouring Vortexes. You would then ſee your Heaven ſhine bright with an infinite Number of Fires cloſe to one another, and but a little diſtant from you; ſo that tho' you ſhould loſe the Light of your own particular Sun, yet there would ſtill remain viſible Suns enough, beſide your own, to make your Night as light as Day, at leaſt the Difference would hardly be perceiv'd; for the Truth is, you would never have any Night at all. The Inhabitants of theſe Worlds, accuſtomed to perpetual Brightneſs, would be ſtrangely aſtoniſh'd, if they ſhould be told, that there are a miſerable ſort of People, who, where they live, have very dark Nights, and when 'tis Day with them, they never ſee more than one Sun; certainly they would think Nature had very little Kindneſs for us, and would tremble with

with Horror, to think what a ſad Condition we are in.

I do not ask you, *ſaid the Marchioneſs*, whether in thoſe Worlds of the Milky-way, there be any Moons; I ſee they would be of no uſe to thoſe principal Planets which have no Night, and move in Spaces too ſtrait and narrow to cumber themſelves with the Baggage of inferior Planets: yet pray take notice, that by your liberal Multiplication of Worlds, you have ſtarted an Objection not eaſily anſwer'd. The Vortexes whoſe Suns we ſee, touch the Vortex in which we are; and if it be true, that Vortexes are round, how then can ſo many Bowls or Globes all touch one ſingle one? I would fain know how this may be done, but cannot well reconcile it.

You ſhew a great deal of Wit, Madam, *ſaid I*, in raiſing this Doubt, and likewiſe in not being able to reſolve it; for in itſelf the thing is extreme difficult, and in the manner you conceive it, no Anſwer can be given to it; and he muſt be a Fool who goes about to find

find Anſwers to Objections which are unanſwerable. If our Vortex had the Form of a Dye, it would have ſix Squares or flat Faces, and would be far from being round; and upon every one of theſe Squares might be plac'd a Vortex of the ſame Figure; but if inſtead of theſe ſix ſquare Faces, it had 20, 50, or 1000, then might 1000 Vortexes be plac'd upon it, one upon every Flat: and you know very well, that the more flat Faces any Body hath on its Outſide, the nearer it approacheth to Roundneſs; juſt as a Diamond cut facewiſe on every Side, if the Faces be very many and little, it will look as round as a Pearl of the ſame Bigneſs. 'Tis in this manner that the Vortexes are round; they have an infinite number of Faces on their Outſide, and every one of 'em has upon it another Vortex: theſe Faces are not all equal and alike; but here, ſome are greater, and there, ſome leſs: the leaſt Faces of our Vortex, for Example, anſwer to the Milky-way, and ſuſtain all thoſe little Worlds. When two Vortexes are ſupported

ported by the two next Flats on which they ſtand, if they leave beneath any void Space between them, as it muſt often happen, Nature, who is an excellent Houſewife, and ſuffers nothing to be uſeleſs, preſently fills up this void Space with a little Vortex or two, perhaps with a thouſand, which never incommode the others, and become one, two, or a thouſand Worlds more; ſo that there may be many more Worlds than our Vortex has flat Faces to bear 'em. I will lay a good Wager, that tho' theſe little Worlds were made only to be thrown into the Corners of the Univerſe, which otherwiſe would have been void and uſeleſs; and tho' they are unknown to other Worlds which they touch, yet they are well ſatisfy'd with their being where they are. Theſe are the little Worlds whoſe Suns are not to be diſcovered but with a Teleſcope, and whoſe Number is prodigious. To conclude, all theſe Vortexes are join'd to one another in ſo admirable a manner, that every one turns round about his Sun, without changing Place; every one

one has ſuch a Turn as is moſt eaſy and agreeable to its own Situation; they take hold of one another like the Wheels of a Watch, and mutually help one another's Motion: and yet 'tis certain that they act contrary to one another. Every World, as ſome ſay, is like a Foot-ball, made of a Bladder, cover'd with Leather, which ſometimes ſwells of its own accord, and would extend itſelf if it were not hinder'd. But this ſwelling World being preſs'd by the next to it, returns to its firſt Figure; then ſwells again, and is again depreſs'd: and ſome affirm, that the Reaſon why the fixed Stars give a twinkling and trembling Light, and ſometimes ſeem not to ſhine at all, is becauſe their Vortexes perpetually puſh and preſs our Vortex, and ours again continually repulſes theirs.

I am in love with theſe Fancies, *ſaid the Marchioneſs*; I am pleas'd with theſe Foot-balls, which ſwell every Moment, and ſink again, and with theſe Worlds, wl ich are continually ſtriving and puſhing one another: but above all, I am pleas'd

pleas'd to see how this justling keeps up the Trade of Light, which is certainly the only Correspondence that is between them.

No, no, Madam, *said I*; Light is not their sole Commerce; the neighbouring Worlds sometimes pay Visits to us, and that in a very magnificent and splendid manner: There come Comets to us from thence, adorn'd with bright shining Hair, venerable Beards, or Majestick Tails. These, *said she*, are Ambassadors, whose Visits may be well spared, since they serve only to affright us. They scare only Children, *said I*, with their extraordinary Train; but indeed, the number of such Children is now-a-days very great. Comets are nothing but Planets, which belong to a neighbouring Vortex, they move towards the outside of it: but perhaps this Vortex being differently pres's'd by those Vortexes which encompass it, 'tis rounder above than it is below, and it is the lower part that is still towards us. These Planets which have begun to move in a Circle above, are aware that below

their

their Vortex will fail 'em, becauſe it is as it were broken: Therefore, to continue the circular Motion, it is neceſſary that they enter into another Vortex, which we will ſuppoſe is ours, and that they cut through the outſides of it. They appear to us very high, and are much higher than *Saturn*; and according to our Syſtem, it is abſolutely neceſſary they ſhould be ſo high, for Reaſons that ſignify nothing to our preſent Subject. From *Saturn* downwards to the other ſide of our Vortex, there is a great void ſpace without any Planets. Our Adverſaries often ask us, to what purpoſe this void Space ſerves? But let them not trouble themſelves any more; I have found a uſe for it: 'Tis the Apartment of thoſe ſtrange Planets, which come into our World.

I underſtand you, *ſays ſhe*; we do not ſuffer them to come into the Heart of our Vortex, among our own Planets, but we receive them as the *Grand Signior* does the Ambaſſadors that are ſent to him; he will not ſhew them ſo much Reſpect, as to let 'em lodge in *Conſtantinople*,

tinople, but quarters 'em in one of the Suburbs of the City. Madam, *ſaid I*, we and the *Ottomans* agree likewiſe in this, that as they receive Ambaſſadors, but never ſend any, ſo we never ſend any of our Planets into the Worlds that are next us.

By this, *ſays ſhe*, it appears, that we are very proud; however, I do not yet very well know what I am to believe. Theſe foreign Planets, with their Tails and their Beards, have a terrible Countenance, it may be they are ſent to affront us; but ours that are of another make, if they ſhould get into other Worlds, are not ſo proper to make People afraid.

Their Beards and their Tails, Madam, *ſaid I*, are not real, they are *Phænomena*, and but mere Appearances. Theſe foreign Planets differ in nothing from ours; but entring into our Vortex, they ſeem to us to have Tails or Beards, by a certain ſort of Illumination which they receive from the Sun, and which has not been yet well explain'd. But certain it is, that 'tis but a kind of Illumination;

mination; and when I am able, I will tell you how 'tis done. I wiſh then, *ſays ſhe*, that our *Saturn* would go take a Tail and a Beard in another Vortex, and affright all the Inhabitants of it. That done, I would have him come back again, leaving his terrible Accoutrements behind him, and taking his uſual place amongſt our other Planets, fall to his ordinary Buſineſs. 'Tis better for him, *ſaid I*, not to go out of our Vortex. I have told you how rude and violent the ſhock is, when two Vortexes joſtle one another; a poor Planet muſt needs be terribly ſhaken, and its Inhabitants in no better Condition. We think our ſelves very unhappy when a Comet appears; but 'tis the Comet that is in an ill Caſe. I do not believe that, *ſays ſhe*; it brings all its Inhabitants with it in very good Health; there can be nothing ſo diverting as to change Vortexes. We that never go out of our own Sphere, lead but a dull Life. If the Inhabitants of a Comet had but the Wit to foreſee the time when they are to come into our World, they who had already made the Voyage,

would tell their Neighbours before-hand what they would ſee; they would tell them, that they would diſcover a Planet with a great Ring about it, meaning our *Saturn*; they would alſo ſay, you ſhall ſee another Planet which has four little ones to wait on it: and perhaps ſome of them, reſolved to obſerve the very Moment of their Entrance into our World, would preſently cry out, *A new Sun, a new Sun!* as Sailors uſe to cry, *Land, Land!*

You have no Reaſon then, *ſaid I*, to pity the Inhabitants of a Comet; yet I ſuppoſe you will think their Condition lamentable, who inhabit a Vortex, whoſe Sun comes in time to be quite extinguiſhed, and conſequently live in eternal Night. How! *cry'd the Marchioneſs*, can Suns be extinguiſh'd? Yes, without doubt, *ſaid I*; for People ſome thouſand Years ago ſaw fixed Stars in the Sky, which are now no more to be ſeen; theſe were Suns which have loſt their Light, and certainly there muſt be a ſtrange Deſolation in their Vortexes, and a general Mortality over all the Planets:

Planets: for what can People do without a Sun? This is a diſmal Fancy, *ſaid the Lady*, I would not if I could help it, let it come into my Head. I will tell you, if you pleaſe, *I reply'd*, what in this Particular is the Opinion of learned Aſtronomers. They think, that the fixed Stars which have diſappear'd, are not quite extinguiſh'd, but that they are half Suns, that is, they have one half dark, and the other half light; and turning round upon their own Axis or Center, they ſometimes ſhew us their light ſide, and afterwards turning to us their dark ſide, we ſee them no more. To oblige you, Madam, I will be of this Opinion, becauſe it is not ſo harſh as the other; but I cannot make it good, but in relation to ſome certain Stars; becauſe, as *Huygens* has lately obſerv'd, thoſe Stars have their regulated times of appearing and diſappearing, otherwiſe there could be no ſuch thing as half Suns. But what ſhall we ſay of Stars, which totally diſappear, and never ſhew themſelves again after they have finiſh'd their Courſe of turning round

upon their own Axis? You are too juſt, Madam, to oblige me to believe, that ſuch Stars are half Suns. However, I will try once more what I can do in favour of your Opinion: The Suns are not extinct, they are only ſunk ſo low into the immenſe Depth of Heaven, that we cannot poſſibly ſee them: in this caſe the Vortex follows his Sun, and all's well again. 'Tis true, that the greateſt part of the fixed Stars have not this Motion, by which they remove themſelves ſo far from us, becauſe at other times they might return again nearer to us, and we ſhould ſee them ſometimes greater, and ſometimes leſs, which never happens. But we will ſuppoſe that none but the little, light, and moſt active Vortexes, which ſlip between the others, make certain Voyages, after which they return again, while the main Body of Vortexes remain unmov'd. 'Tis likewiſe very ſtrange, that ſome fixed Stars ſhew themſelves to us, ſpending a great deal of time in appearing and diſappearing, and at laſt totally and entirely diſappear. Half Suns would appear again at their ſet and

regulated

regulated time. But Suns which ſhould be ſunk low into the Depths of Heaven, would diſappear but once, and not appeaar again for a vaſt ſpace of Time. Now, Madam, boldly declare your Opinion: Muſt not theſe Stars of neceſſity be Suns, which are ſo much darkned, as not to be viſible to us, and yet afterwards ſhine again, and at laſt are wholly extinct? How can a Sun, *ſaid the Marchioneſs*, be darkned, and quite extinguiſh'd, when it is in its own Nature a Fountain of Light? It may be done, Madam, *ſaid I*, with all the eaſe in the World, if *Deſcartes*'s Opinion be true, that our Sun has Spots: now, whether theſe Spots be Scum or thick Miſts, or what you pleaſe, they may thicken and unite, till at laſt they thicken the Sun with a Cruſt, which daily grows thicker, and then farewel Sun. We have hitherto 'ſcap'd pretty well; but 'tis ſaid, that the Sun for ſome whole Years together has look'd very pale: for Example, the Year after *Cæſar*'s Death, it was this Cruſt that then began to grow; but the Force of the Sun broke and diſſipated it: had it

continued, we had been all loſt People. You make tremble, *reply'd the Lady.* And now I know the fatal Conſequences of the Sun's Paleneſs, I believe, inſtead of going every Morning to my Glaſs, to ſee how I look, I ſhall caſt my Eyes up to Heaven, to ſee whether or no the Sun looks pale. Oh, Madam, *ſaid I*, there is a great deal of time required to ruin a World. I grant it, *ſaid ſhe*; yet 'tis but time that is requir'd. I confeſs it, *ſaid I*; all this immenſe Maſs of Matter, that compoſes the Univerſe, is in perpetual Motion, no part of it excepted: And ſince every part is moved, you may be ſure that Changes muſt happen ſooner or later; but ſtill in times proportion'd to the Effect. The Antients were pleaſant Gentlemen, to imagine that the celeſtial Bodies were in their own Nature unchangeable, becauſe they obſerved no change in them; but they did not live long enough to confirm their Opinion by their own Experience; they were Boys in compariſon of us. Give me leave, Madam, to explain myſelf by an Allegory: If Roſes, which laſt but a Day, could

could write Hiſtories, and leave Memoirs one to another; and if the firſt Roſe ſhould draw an exact Picture of his Gardener, and after fifteen thouſand Roſe-Ages, it ſhould be left to other Roſes, and ſo on ſtill to thoſe that ſhould ſucceed without any change in it; ſhould the Roſes hereupon ſay, we have every Day ſeen the ſame Gardener, and in the memory of Roſes none ever ſaw any Gardener but this, he is ſtill the ſame he was; and therefore certainly he will not die as we do, for there is no Change at all in him: Would not theſe Roſes, Madam, talk very fooliſhly? And yet there would be more Reaſon in their Diſcourſe, than there was in what the Antients ſaid concerning celeſtial Bodies; and tho' even to this very Day there ſhould appear no viſible Change in the Heavens, and the Matter of which they are made ſhould have all the Signs of an eternal Duration, without any change; yet I would not believe them unchangeable, till I had the experience of many more Ages. Ought we, whoſe Lives are but a Span, to make our Continuance

the Menſuration of any other Being? 'Tis not ſo eaſy a Matter to be eternal. To have laſted many Ages of Men, one after another, is no Sign of Immortality. Truly, *ſays the Marchioneſs*, I find the Worlds are far from being able to pretend to it; I will not do them ſo much honour as to compare them to the Gardener who lived ſo much longer than the Roſes. I begin to think them like the Roſes themſelves, which blow one Day, and die the next: For now I underſtand, that if old Stars diſappear, new ones will come in their room, becauſe every Species muſt preſerve itſelf. No Species, Madam, *ſaid I*, can totally periſh; ſome perhaps will tell you, that ſuch new Stars are Suns, which return to our ſight again, after they have been a long time hid from us in the Profundity of Heaven: Others may tell you, they are Suns cleared from that thick Cruſt, which once covered them. If I ſhould think all this poſſible, yet I likewiſe believe that the Univerſe may be fram'd in ſuch a manner, that from time to time it may produce new Suns. Why may not that Matter,

Matter, which is proper to make a Sun, be dispers'd here and there, and gather itself again at long run into one certain Place, and lay the Foundation of a new World? I am very much inclin'd to believe such new Productions, because they suit with that glorious and admirable Idea which I have of the Works of Nature. Can we think that all-wise Nature knows no more than the Secret of making Herbs and Plants live and die by a continual Revolution? I am verily persuaded, (and are not you so too, Madam?) that Nature, without much Cost or Pains, can put the same Secret in Practice upon the Worlds. I now find, *says she*, the Worlds, the Heavens, and celestial Bodies so subject to change, that I am come to myself again. To recover ourselves the better, *I reply'd*, let us say no more of these Matters. We are arriv'd at the very Roof and Top of all the Heavens; and to tell you whether there there be any Stars beyond it, you must have an abler Astronomer than I am: You may place Worlds there, or no Worlds, as you please. 'Tis

the Philosopher's Empire to describe those vast invisible Countries, which are, and are not, or are such as he pleases to make 'em: It is enough for me to have carried your Mind as far as you can see with your Eyes.

Well, *says the Marchioness*, I have now in my head the whole System of the Universe. How learned am I become! Indeed, Madam, *said I*, you are pretty knowing; and you are so with the Advantage of believing, or not believing any thing I have said. For all my Pains I only beg this Favour, that whenever you look on the Sun, the Heaven, or the Stars, you will think of me.

The

The Sixth Evening.

New Obſervations *confirming the* Preceding Ones. *And ſome farther Diſcoveries made in the* Heavens.

'TIS ſo long ſince the Marchioneſs and I had any Diſcourſe concerning the *Planetary Worlds*, that we began to queſtion whether we had ever talk'd on that Subject. I went one Day to viſit her, and came in juſt as two very polite Gentlemen had taken their Leaves of her. Well! *ſays Madam, the very Moment ſhe perceived me*, you ſee what Viſiters I have had; and, I proteſt, it has given me ſome room to ſuſpect it has been in your Power to impoſe upon my Judgment. I ſhould be very proud, *reply'd I*, if I

could flatter myself with such a Power, because I look upon it to be the hardest Task any one could attempt. As hard as it is, *says she*, I am afraid you have done it. I know not how it came about, but our Conversation turn'd upon the *Plurality of Worlds* with my two Friends who are just gone: I am not certain, but they might introduce the Discourse with a malicious Design. I made no Scruple to tell them directly, that all the Planets were inhabited; one of them reply'd, he was very well satisfy'd I did not believe a Word of it; and I, with all the Simplicity imaginable, maintain'd, it was my real Opinion: he still look'd upon it as a piece of Dissimulation, design'd to divert the Company; and I thought, what made him so positive that I did not believe my own Sentiments, was, that he had too high an Opinion of me to conceive that I could entertain so extravagant a Notion. As for the other Gentleman, who had not altogether that Esteem for me, he took me at my Word. For God's sake, why did you put a Thing

in

in my Head, which People that value me cannot think I maintain ſeriouſly? Nay, Madam, *ſays I*, but why would you attempt to maintain any ſerious Poſition among a Set of People, who, I am ſure, never entered into a Way of Reaſoning which had the leaſt Caſt of Serioufneſs? We ſhould not affront the Inhabitants of the Planets ſo highly; but content ourſelves with being a little ſelect Number of Advocates for them, and not communicate our Myſteries to the Vulgar. How! *ſays the Marchioneſs*, do you call my two laſt Viſitants the *Vulgar?* They may have Wit enough, *ſays I*, but they never Reaſon at all. And your Reaſoners, who are a ſevere Set of People, will not make any Difficulty of ſorting them with the Vulgar. On the other Hand, theſe Men of Fire revenge themſelves by ridiculing the Reaſoners; and think it is a very juſt Principle in Nature, that every Species deſpiſes what it wants. It were right, if it was poſſible, to conform ourſelves to every Species; and it had been much better for

for you to have rallied on the Inhabitants of the Planets with your two Friends, becauſe they are better at Raillery than Reaſoning, which they never make Uſe of: You had then come off with their joint Eſteem; and the Planets had not loſt a ſingle Inhabitant by it. Would you have had me, *ſays ſhe*, ſacrifice the Truth to a Jeſt? And is that all the Conſcience you have? I own, *anſwer'd I*, that I have no great Zeal for theſe kind of Truths, and I will ſacrifice them with all my Soul to the leaſt Conveniencies of Company. For Inſtance, I ſee what is, and always will be, the Reaſon why the Opinion of the Planets being inhabited, is not thought ſo probable as it really is: The Planets always preſent themſelves to our View as Bodies which emit Light; and not at all like great Plains and Meadows. We ſhould readily agree that Plains and Meadows were inhabited; but for luminous Bodies to be ſo too, there is no Ground to believe. Reaſon may come and tell us over and over, that there are Plains and Meadows in theſe

Planets,

Planets; but Reaſon comes a Day too late; one Glance of our Eyes has had its Effect before her, we will not hear a Word ſhe ſays; the Planets muſt be luminous Bodies, and what Sort of Inhabitants they ſhould have, our Imagination of Courſe would preſently repreſent their Figures to us. It is what ſhe cannot do, and the ſhorteſt Way is to believe there are no ſuch Beings. Would you have me, for the Eſtabliſhment of theſe Planetary People, whoſe Intereſts are far from touching me, go to attack thoſe formidable Powers, called *Senſe* and *Imagination*? It is an Enterprize would require a good Stock of Courage, and we cannot eaſily prevail on Men, to ſubſtitute their Reaſon in the Place of their Eyes. I ſometimes meet with reaſonable People, who are willing, after a thouſand Demonſtrations, to believe that the Planets are ſo many Earths: But their Belief is not ſuch as it would be, if they had not ſeen them under a different Appearance; they ſtill remember the firſt Idea they entertained, and cannot well

well recover themſelves from it. It is theſe kind of People, who, in believing our Opinion, ſeem to do it a Courteſy, and only favour it for the ſake of a certain Pleaſure which its Singularity gives them.

Well, *ſays the Marchioneſs, interrupting me*, and is not this ſufficient for an Opinion, which is but barely probable? You would be very much ſurprized, *ſays I*, if I ſhould tell you, *probable* is not a very modeſt Term. Is it ſimply probable that there ever was ſuch a Man as *Alexander* the Great? You hold it very certain that there was; and upon what is this Certainty founded? Becauſe you have all the Proofs which you could deſire in a like Matter? and there does not the leaſt Subject for Doubt preſent itſelf, to ſuſpend or arreſt your Determination? For you never could ſee this *Alexander*, and you have not one Mathematical Demonſtration that there ever was ſuch a Man. Now what would you ſay if the Inhabitants of the Planets were almoſt in the very ſame Caſe? We cannot pretend to make

make you ſee them, and you cannot inſiſt upon the Demonſtration here, as you would in a Mathematical Queſtion. But you have all the Proofs you could deſire in our World: The entire Reſemblance of the Planets with the Earth which is inhabited, the Impoſſibility of conceiving any other Uſe for which they were created, the Fecundity and Magnificence of Nature, the certain Regards ſhe ſeems to have had to the Neceſſities of their Inhabitants, as in giving Moons to thoſe Planets remote from the Sun, and more Moons ſtill to thoſe yet more remote; and what is ſtill very material, there are all Things to be ſaid on one Side, and nothing on the other; and you cannot comprehend the leaſt Subject for a Doubt, unleſs you will take the Eyes and Underſtanding of the Vulgar. In ſhort, ſuppoſing that theſe Inhabitants of the Planets really exiſt, they could not declare themſelves by more Marks, or Marks more ſenſible; and after this you are to conſider whether you are willing not to take their Caſe to be more

more than purely probable. But you would not have me, *says she*, look upon this to be as certain as that there was such a Man as *Alexander?* Not altogether, Madam, *says I*; for tho' we have as many Proofs touching the Inhabitants of the Planets, as we can have in the Situation we are, yet the Number of these Proofs is not great. I must renounce these Planetary Inhabitants, *said her Ladyship, interrupting me*, for I cannot conceive how to rank them in my Imagination; there is no absolute Certainty of them, and yet there is more than a Probability; so that I am confounded in my Notions. Ah, Madam, *says I*, never put yourself out of Conceit with them for that; the most common and ordinary Clocks shew the Hours, but those are wrought with more Art and Nicety which shew the Minutes. Just so your ordinary Capacities are sensible of the Difference betwixt a simple Probability, and an evident Certainty; but it is only your fine Spirits that discern the exact Proportions of Certainty or Probability, and can mark,

mark, if I may uſe the Phraſe, the Minutes in their Sentiments. Now place the Inhabitants of the Planets a little below *Alexander*; yet above many other Hiſtorical Facts which are not ſo clearly proved: I believe this Poſition will do. I love Order, *ſays ſhe*, and you oblige me in thus ranging my Ideas for me: But pray, why did not you take this Care before? Becauſe, *ſays I*, ſhould you believe the Inhabitants of the Planets either a little more or leſs than they deſerve, there will be no great Damage in it. I am ſure that you do not believe the *Motion* of the *Earth* ſo fully as it ought to be believed; and have you much Reaſon to complain on that Score? O! for that matter, *replies ſhe*, I have diſcharged myſelf very well, you have nothing to reproach me with on that Account, for I firmly believe that the *Earth* turns. And yet, *ſays I*, Madam, I have not given you the ſtrongeſt Reaſons in proving it. Ah! Traytor, *ſhe cried*, to make me believe Things upon feeble Proofs! Then you did not think me worthy of

believing

believing upon ſubſtantial Reaſons? I only proved Things, *ſays I*, upon little plauſible Reaſons, and ſuch as were adapted to your peculiar Uſe: Should I have conjured up as ſtrong and ſolid Arguments, as if I had been to attack a Doctor in the Science? Yes, *ſays ſhe*, pray take me for a Doctor from this Moment, and let me have your full Demonſtrations of the *Earth's* moving.

With all my Heart, *ſays I*, Madam, and I own the Proof pleaſes me ſtrangely, perhaps becauſe I think it was of my own finding; yet it is ſo good and natural, that I muſt not preſume poſitively to have been the Inventor of it: It is moſt certain, that if a learned Man was puzzled, and deſired to make Replications to it, he would be obliged to declaim at large, which is the only Method in the World to confound a learned Man. We muſt grant, that all the *Celeſtial Bodies*, in 24 Hours, turn round the *Earth*, or that the *Earth* turning on itſelf, imparts this Motion to all the *Celeſtial Bodies*. But

But that they really have this Revolution in 24 Hours round the *Earth*, is a Matter which has the leaſt Probability in the World, tho' the Abſurdity does not preſently appear to our View. All the Planets certainly make their great Revolution about the *Sun*; but theſe Revolutions of theirs are unequal, according to the Diſtances of the reſpective *Planets* from the *Sun*; for the moſt remote Ones make their Courſe in a longer Time, which is moſt agreeable to Nature: The ſame Order is obſerved among the little ſecondary Planets in turning about a great one. The four *Moons* of *Jupiter*, and the five of *Saturn*, make their Circles in more or leſs Time round their great Planet, according as they are more or leſs remote. Beſides, it is certain that the Planets have Motions upon their own Centers, and theſe Motions likewiſe are unequal. We cannot well tell how to account for this Inequality, whether it proceeds from the different Magnitudes of the Planets, or on the different Swiftneſs of the particular *Vortexes* which incloſe

incloſe them, and the liquid Matters in which they are ſuſtained; but, in ſhort, the Inequality is moſt undoubted; and ſuch is the Order of Nature in general, that whatever is common to many Things, is found at the ſame Time to vary in ſome different Particulars.

I underſtand you, *ſays the Marchioneſs, interrupting me*, and I think, there is a great deal of Reaſon in what you ſay; I am entirely of your Mind, if the *Planets* turned about the *Earth*, they would do it in unequal Spaces of Time, according to their Diſtances, as they do about the *Sun:* Is not that the Meaning of what you were ſaying? Exactly, *Madam, ſays I*; their unequal Diſtances with reſpect to the *Earth*, their different Magnitudes, and the different Rapidity of the particular *Vortexes* incloſing them, ſhould conſequently produce Differences in their pretended *Motion* round the *Earth*, as well as in all their other *Motions.* And the *fixed Stars*, which are at ſuch a prodigious Diſtance from us, and ſo much elevated above every Thing that can take

take a general Motion round us, at leaſt which are ſituated in a Place whence this Motion ſhould be very much weakned, would there not be a very great Probability that they did not turn at all about us in 24 Hours, as the *Moon* does who is ſo near us? And ſhould not *Comets*, which are Strangers in our *Vortex*, and which run Courſes ſo different one from the other, and with ſuch unequal Rapidity, be excuſed from turning round us in the ſame Space of 24 Hours? But no Matter, *fixed Stars*, and *Comets*, and all muſt turn round the *Earth* in 24 Hours; yet, if there were ſome Minutes Difference in theſe Motions, we might be contented; and they all muſt make them with the moſt exact Equality, or rather the only exact Equality which is in the World, and not one Minute more or leſs allowed. In Reality, this Matter is ſtrangely to be ſuſpected.

O! ſays the *Lady*, ſince it is poſſible that this grand Equality ſhould be only in our Imagination, I am intirely convinced

vinced it is derived only from thence. I am very well pleaſed, that any Poſition, which is againſt the Genius of Nature, ſhould fall entirely upon ourſelves, and that ſhe ſhould ſtand diſcharged, tho' at our Expence. For my Part, *ſays I*, I am ſuch a Foe to a perfect Equality, that I cannot even allow all the Turns which the Earth every Day makes on herſelf ſhould be preciſely in 24 Hours, and always equal one to another; I ſhould be very much inclined to think that there are Variations. Variations! *cried the Lady*; why, do not our Pendulums mark an entire Equality? O, *ſays I*, to your Pendulums I muſt object, for they cannot be altogether juſt; and ſometimes when they are, in ſhewing us that one Circuit of 24 Hours is longer or ſhorter than another, we ſhould rather be inclined to believe them irregular, than to ſuſpect the Earth of any Irregularity in her Revolutions. What a complaiſant Reſpect is this we have for her! I would no more depend on the *Earth*, than on a *Pendulum*; And the very ſame Caſualties

ſualties almoſt which will diſorder the one, will make the other irregular! Only, I believe there muſt be more Time allowed for the *Earth*, than a *Pendulum*, to be viſibly put out of Order; and that is all the Advantage we can give on her Side. But might ſhe not by Degrees draw nearer to the *Sun?* And there finding herſelf in a Situation, where the Matter is more agitated, and the Motion more rapid, ſhe will in leſs Time make her double Revolution both about the *Sun* and herſelf; ſo conſequently her Years and Days will be much ſhortned, but not to be perceived, becauſe we muſt ſtill go on to divide the Year into 365 Days, and the Day into 24 Hours: So that without living longer than we now do, we ſhall live more Years; and on the other Hand, as the *Earth* withdraws from the *Sun*, we ſhall live fewer Years than we do now, and yet have our lives of the ſame Extent. There is a great deal of Probability, *ſays ſhe*, that whenever it falls out thus, long Succeſſions of Ages will make but very little varia-

tion. I agree with you, Madam, *replied I*, the Conduct of Nature is very nice, and she has a Method of bringing about all Things by Degrees, which are not sensible, but in very obvious and easy Changes; We are scarce able to perceive the Change of the Seasons and for some others which are made with a certain Deliberation, they do not fail to escape our Observance. However, all is in a perpetual Rotation, and not so much as the Lady's Face in the *Moon*, which was discovered with Telescopes, within these 40 Years, but what is grown considerably old. She had a good tolerable Countenance, but now her Cheeks are sunk, her Nose grown long, and her Chin and Forehead meet, so that all Graces are vanished, and Age has made her a terrible Spectacle.

What a Story do you tell, says the *Lady*, interrupting me! It is no Imposition, *Madam*, *replied I*, they have perceived in the *Moon* a particular Figure, which had the Air of a Woman's Head jutting out of Rocks, and it is owing to some Changes that have happened

pened there. Some Pieces of Mountains have mouldered away, and left us to discover three Points, which can only serve to make up the Forehead, Nose, and Chin, of an old Woman. Well, *says she*, but do not you think it is some Destiny that had a particular Spite to Beauty? And very justly it was this Female-Head, which she would attack above all the *Moon*. Perhaps in Recompence, *replied I*, the Changes which happen upon our *Earth*, dress out some Face, which the *People* in the *Moon* see; I mean something like what we conceive a *Face* in the *Moon*; for every one bestows on Objects those Ideas of which they themselves are full. Our Astronomers see on the Surface of the *Moon*, the Faces of Women, and may be, if the Ladies were to make their Speculations, they would discern the Physiognomy of fine Men. For my Part, *Madam*, I do not know whether I should not fancy your Ladyship's Charms there. I protest, *says she*, I cannot help being obliged to any one who should find me there. But to come

back to what you were mentioning juſt now: Do any conſiderable Changes affect the Earth? In all Appearance they do, *replied I*: Old Fables tell us, that *Hercules* ſplit aſunder with his Hands, the two Mountains, called *Calpe* and *Abila*, which ſtand betwixt *Afric* and *Spain*, ſtopped the Ocean from flowing there, and that immediately the Sea ruſhed with Violence over the Land, and made that great Gulph which we call the *Mediterranean*. Now this is not only fabulous, but a Hiſtory of thoſe remote Times, which has been diſguiſed, either from the *Ignorance* of the *People*, or thro' the *Love* they had for the *Marvellous*, the moſt ancient Frailties of Mankind. That *Hercules* ſhould ſeparate two Mountains with his two Hands, is abſolutely incredible; but that in the Time of one *Hercules*, or other, for there were 50 of that Name, the Ocean ſhould force down two Mountains, not ſo ſtrong as others in the World, perhaps thro' the Aſſiſtance of ſome Earthquake, and ſo take his Courſe be-

betwixt *Europe* and *Afric*, gives me no Pain to believe. What a notable Spot might the *Lunar-Inhabitants* all of a ſudden diſcover on our Earth; for you know, *Madam*, that Seas are Spots. It is no leſs than the common Opinion, that *Sicily* was ſeparated from *Italy*, and *Cyprus* from *Syria*: There are ſometimes new Iſlands formed in the Seas: Earthquakes have ſwallowed up Mountains, others have roſe and altered the Courſe of the Planets. The Philoſophers give us Apprehenſions that the Kingdoms of *Naples* and *Sicily*, which are Countries founded upon great ſubterranean Vaults, full of Sulphur, which will one Day ſink in, when thoſe Vaults ſhall no longer be able to reſiſt the Flames which they contain, and at this Time exhale at thoſe Vent-holes the Mouths of *Veſuvius* and *Ætna*. Is not here enough to diverſify the Sight which we give to the *People* in the *Moon?*

I had much rather, *ſays the Marchioneſs*, that we had diſguſted them with the ſame Object always than di-

verted them with the ſwallowing up of Provinces.

I do not know, *replied I*, if within this little Time there have not been ſeveral burnt up in *Jupiter*. What, Provinces burnt up in *Jupiter! crys ſhe*, upon my Word, that would be conſiderable News. Very conſiderable, *ſays I*, *Madam:* We have remarked theſe 20 Years in *Jupiter* a long Trail of Light, more glaring than the reſt of that Planet's Body. We have, here, had Deluges, perhaps they may have ſuffered great Conflagrations in *Jupiter:* How do we know to the contrary? *Jupiter* is 90 Times bigger than the *Earth*, and turns on his own Center in 10 Hours, whereas we do not turn in leſs than 24, which implies that his Motion is 216 Times ſtronger than ours. May it not be poſſible, that in ſo rapid a Circulation, its moſt dry and combuſtible Parts ſhould take fire, as we ſee the Axle-trees in Wheels, from the Rapidity of their Motions, will break out into Flames? But however it is, this Light of *Jupiter* is by

no

no means comparable to another, which in all Probability is as ancient as the World, and yet we have never seen it. How does a Light order it to be conceal-ed, *says she*; there must be some singular Address to compass that Point.

This Light, *replied I*, never appears but at Twilight, which is often strong enough to drown it; and even when Twilight suffers it to appear, either the Vapours of the Horizon rob us of it, or it is so very faint, and hardly to be perceived, that for want of Exactness in our Knowledge, we mistake it for the Twilight. But in short, they have of late years with much Certainty distinguished it; and it has been for some Time the Delight of the Astronomers, whose Curiosity wanted to be roused by some Novelty, and they could not well have been more touched if they had discovered some new secondary Planets. The two latter *Moons* of *Saturn*, for Instance, did not ravish them to that Degree which the Guards or *Moons* of *Jupiter* did: But now we are fully accustomed to it; we see, one

Month before, and after, the Vernal Equinox, when the *Sun* is ſet and the Twilight over, a certain whitiſh Light reſembling the Tail of a Comet. We ſee the ſame before *Sun* riſe, and before the Twilight, towards the Autumnal Equinox; and towards the Winter Solſtice we ſee it Night and Morning, except at theſe Times it cannot, as I but now obſerved, diſengage itſelf from the Twilights, which are too ſtrong and laſting; for we ſuppoſe it to be a continued Light, and in all Probability it is ſo. We have begun to conjecture that it is produc'd from ſome prodigious Quantity of Matter crouded together, which circles round the *Sun* to a certain Extent: The greateſt Part of his Rays pierce thro' this groſs Circuit, and come down to us in a right Line; but ſome reſting on the inner Surface of this Matter, are from thence reflected to us, and come with the direct Rays, or elſe we cannot have them either Morning or Evening. Now as theſe reflected Rays are ſhot from a greater Height than thoſe which

which are direct, we must consequently have them sooner, and keep them longer.

On this Foot, I must acquiesce in what I have already mentioned, that the *Moon* must have no Twilight for want of being surrounded by such a gross Air as the *Earth*. But she can be no Loser; her Twilights will proceed from that kind of gross Air which surrounds the *Sun*, and reflects his Rays on Places which his direct one cannot reach. But pray let me know, *says the Marchioness*, are not there Twilights settled for all the Planets, who will not need every one to be clothed with a distinct gross Air, because that which surrounds the *Sun* alone, may have one general Effect for all the *Planets* in the *Vortex?* I am mighty willing to think Dame-Nature, agreeable to that Inclination which I know she has to Oeconomy, and good Management, should make that single Means answer her Purpose: Yet, *replied I*, notwithstanding this supposed Oeconomy, she must have, with Respect

to

to our *Earth*, two Causes for Twilight; one whereof, which is the thick Air about the *Sun*, will be wholly useless, and can only be an Object of Curiosity for the Students of the *Observatory*; but not to conceal any Thing, it is possible that only the *Earth* sends out from herself Vapours and Exhalations gross enough to produce Twilights, and that Nature had Reason to provide, by one general Means, for the Necessities of all the other *Planets*, which are, if I may so say, of a purer Mold, and their Evaporations consequently more subtle. We are perhaps, among all the Inhabitants of the *Worlds* in our *Vortex*, the only Persons who required to have a more gross and thick Air given us to breathe in. With what Contempt would the Inhabitants of the other Planets consider us, if they knew this?

They would be out in their Reasoning, *says the Marchioness*, we are not to be despised for being enveloped with a thick Air, since the *Sun* himself is so surrounded. Pray tell me, is not this

Air

Air produced by certain *Vapours*, which you have formerly told me iſſued from the *Sun*, and does it not ſerve to break the firſt Force of his Rays, which had elſe probably been to Exceſs? I conceive that the *Sun* may be veiled by Nature, to be more proportioned to our Uſe. Well, *Madam*, *replied I*, this is ſome ſmall *Introduction* to a *Syſtem* which you have very happily ſtarted. We may add, that theſe Vapours produce a kind of *Rain*, which falling back upon the *Sun*, may cool and refreſh it, as we ſometimes throw Water into a Forge, when the Fire is too fierce. There is not any Thing but what we may imagine, to aſſiſt Nature's Addreſs, but ſhe has another kind of Addreſs very particular, which is to conceal herſelf from us, and we ſhould not willingly be confident that we have found out her Method of acting on her Deſigns in it: In caſe of new Diſcoveries, we ſhould not be too importunate in our Reaſonings, tho' we are always fond enough to do it; and your *true Philoſophers* are like *Elephants*, who

who as they go, never put their second Foot to the Ground, 'till their first be well fixed. The Comparison seems the more rational to me, *says she*, as the Merit of those two Species of Animals, *Elephants* and *Philosophers*, does not at all consist in exterior Agreements. I am willing to mistake the Judgment of both; now teach me some of the latter Discoveries, and I promise you not to make any rash Systems.

I will tell you, *Madam, replied I*, all the News I know from the Firmament, and I believe the freshest Advices you can have. I am sorry they are not as surprizing and wonderful, as some Observations which I read the other Day in *An Abridgment of the* CHINESE ANNALS. Written in *Latin*. Those People see *Thousands* of *Stars* at a Time, *fall* from the *Sky* into the *Sea*, with a prodigious Noise, or are dissolved, and melt into Rains; and these are Things which have been seen more than once in *China*. I met with this Observation at

two

two ſeveral Times, pretty diſtant from each other, without reckoning a certain *Star* which goes *Eaſtward*, and burſts like a Squib, always with a great noiſe. It is great Pity that theſe Kinds of *Phænomena* ſhould be reſerv'd for *China* only, and that our Part of the Globe ſhould never have their Share of theſe Sights. It is not long, ſince all our Philoſophers were of Opinion, that they might affirm on good Grounds, that the *Heavens* and all the *Celeſtial Bodies* were incorruptible, and therefore incapable of Change; and yet at the ſame Time, there were ſome Men in the other Part of the *Earth* who ſaw Stars *diſſolve* by *Thouſands*, which muſt produce a very different Opinion. But, *ſays the Marchioneſs*, did we ever hear it allowed that the *Chineſe* were ſuch great Aſtronomers? It is true, we did not, *ſays I*, but the *Chineſe* have an Advantage from being divided from us by ſuch a prodigious Tract of *Earth*, as the *Greeks* had over the *Romans*, by being ſo much prior in Time: Diſtances of

every

every ſort pretend a Right of impoſing on us. In reality, I think ſtill more and more, that there is a certain *Genius* which has never yet been out of the Limits of *Europe*, or at leaſt not much beyond them; perhaps he may not be permitted to ſpread over any great Extent of the Earth at once, and that ſome Fatality preſcribes him very narrow Bounds Let us indulge him whilſt we have him; the beſt of it is, he is not link'd to the Sciences and dry Speculations, but launches out with as much Succeſs into Subjects of Pleaſure, in which Point I queſtion whether any People equal us. Theſe are ſuch Topicks, Madam, as ought to give you Entertainment, and compleat your whole *Syſtem* of *Philoſophy*.

AN

AN

ORATION,

IN

DEFENCE

OF THE

NEW PHILOSOPHY.

SPOKEN

In the THEATRE at *Oxford*, *July* 7, 1693, by Mr. ADDISON.

Done from the *Latin* Original.

HOW long, Gentlemen of the Univerſity, ſhall we ſlaviſhly tread in the Steps of the Ancients, and be afraid of being wiſer than our Anceſtors? How long ſhall we religiouſly worſhip the

the triflings of Antiquity as some do old Wives Stories? It is indeed shameful, when we survey the *great Ornament* of the present Age *, to transfer our Applauses to the Ancients, and to take pains to search into Ages past for Persons fit for Panegyrick.

The ancient Philosophy has had more allowed than it could reasonably pretend to; how often has SHELDON's Theatre rung with *Encomia* on the *Stagyrite*, who, greater than his own *Alexander*, has long, un-opposed, triumphed in our School-Desks, and had the whole World for his Pupils. At length rose CARTESIUS, a happier Genius, who has bravely asserted the Truth against the united Force of all Opposers, and has brought on the Stage a new Method of Philosophizing. But shall we stigmatize with the Name of Novelty that Philosophy, which, tho' but lately revived, is more ancient than the *Peripatetic*, and as old as the Mat-

* NEWTON,

ter

ter from whence it is derived. A great Man indeed He was, and the only one we envy FRANCE *. He solved the Difficulties of the Universe, almost as well as if he had been its Architect. He destroyed those Orbs of glass, which the Whims of Antiquity had fixed above, brought to light that Troop of Forms till then unknown, and has almost extinguished the Element of Fire; nay he with so much clearness traced out the whole Mass of Matter, as to leave no occult Quality untouched. This Philosopher scorned to be any longer bounded within the Streights and Chrystalline Wall of an *Aristotelic* World; no, his Delight is to search the Regions above, to discover new Suns, and new Worlds, which lay hid among the Stars; his Satisfaction is to view that large Kingdom of Air amidst the unfixed Stars, and Lands that pass the Milky Way, and more accurately measure this vast Machine, a Machine

* *Des Cartes.*

fit

fit for Mankind to Philosophize on, and worthy of the Deity, that first framed it.

Here we have not only new Heavens opened to us, but we look down on our Earth; this Philosophy affords us several Kinds of Animals; where, by the Help of Microscopes, our Eyes are so far assisted, that we may discern the Productions of the smallest Creatures, while we consider with a curious Eye the animated Particles of Matter, and behold with Astonishment, the reptile Mountains of living Atoms. Thus are our Eyes become more penetrating by modern Helps, and even that work which Nature boasts for her Master-Piece, is rendered more correct and finished. We no longer pay a blind Veneration to that barbarous *Peripatetic*-Jingle, those Scholastic Terms of Art, once held as Oracles, but consult the Delicates of our own Senses, and by late invented Engines force Nature herself to discover plainly her most valued Secrets, her most hidden Recesses.

By

By the Help of Inſtruments like theſe, that Air, with which bountiful Nature has indulged us, we as often as we pleaſe, by the Force of Art, abridge other Animals of, and keep them in our Pneumatick Pumps, from its common Benefit: What a Pleaſure is it to ſee the fruitleſs Heavings of the Lights, to exhauſt their Lives, and by a moſt artful Sort of Theft rob them of their Breath? From this nothing is ſafe, nothing ſo long lived, which gradually does not languiſh, and fall dead without a Wound. A divine Piece of Art this, and worthy its Author *, who in the Conduct of his Life, and the Force of his Arguments, has ſo nobly honoured our Nation, and the new Philoſophy; one who for this Reaſon too deſerves never to want the Benefit of his own Air, or that he, who has ſo often deprived other Animals of their Life, ſhould ever breathe out his own.

* BOYLE.

On

On no such Grounds, as these has ARISTOTLE built his Philosophy, who from his own Brain furnished out all his Rules of Arts and Sciences, and left nothing untouched on, nothing unregarded but *Truth.* If therefore he precipitated himself into the River *Euripus*, because he could not understand its Ebb and Flow, by the same Logic he might at his first Entrance on Philosophy have destroyed himself, and we may fairly doubt, in which of the Elements he ought to have perished.

After ARISTOTLE's Fate amidst the Waves of *Euripus*, a new Race of *Peripatetics* started up, even worse than their Founder, who handed their Philosophy to after-Ages in so thick an Obscurity, that it has preserved it from the Satire and Ridicule of all Mankind, as understood by very few. Some there are to be found, who spend their Time amidst the Rubbish which these Commentators have filled the World with, and pore more than once on these God-like Treasures of Learning, and stick to them to no other Purpose, unless

leſs to ſhew the World the vaſt Pains they take to be deceived. Can there be a more pleaſant Sight than to ſee theſe wiſe Champions wrangling with each other? The one armed with Propoſitions and Syllogiſms, attacks his Antagoniſt in the ſame Armour: Both Bell-weathers grow angry, and ſtorm, fond of a Victory, which is worth but a Trifle, when obtained: Each, with all his Might, darts out his Barbariſms at the other, they entangle themſelves in their Follies, and as neither knows how to extricate himſelf, they ſound to a Retreat, and when all the Ammunition is ſpent on both Sides, they think fit to keep Silence.

Thus far, Gentlemen, and no farther, launches out the ancient Philoſophy: Let us therefore ſentence for ever this Troop of Commentators, to be tied up in Chains and Libraries, Food only for Moths and Worms, and there let them quietly grow Old, free from the Sight of any Reader.

Joſeph Addiſon.

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